PSCAD X4 Compatibility Charts

The following charts summarize the known compatibility of PSCAD with relevant external software.

1.a Supported Operating Systems - PSCAD

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

PSCAD Versions / Windows[5]	Windows XP	Windows Vista		Windows 7 SP1		Windows 8		Windows 8.1		Windows 10		Windows Server	Windows Server
		32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	2008 R2 SP1	2012 R2
4.2.0	✓	X	X	X	X	X	X	X	X	X	X	X	X
4.2.1 (2006)	✓	X	X	X	X	X	X	X	X	X	X	X	X
4.2.1 (2007)	✓	✓	✓	✓	✓	---	---	---[3]	---[3]	---[3]	---[3]	---	---
X4 (4.3.0)	✓	✓	✓	✓	✓	---	---	---	---	---	---	---	---
X4 (4.3.1)	✓	✓	✓	✓	✓	---	---	---	---	---	---	---	---
X4 (4.4.0)	✓	✓	✓	✓	✓	---	---	---	---	---	---[6]	---	---
X4 (4.4.1)	✓	✓	✓	✓	✓	---	---	---	---	---	---	---	---
X4 (4.5.0)	---[2]	✓	✓	✓	✓	---	---	---	---	---	---	---	---
X4 (4.5.1)	---[2]	✓	✓	✓	✓	---[3]	---[3]	---[3]	---[3]	---	---	---	---
X4 (4.5.2)	---[2]	✓	✓	✓	✓	---[3]	---[3]	---[3]	---[3]	---	---	---	---
X4 (4.5.3)	---[2]	✓	✓	✓	✓	---[3]	---[3]	---[3]	---[3]	---	---	---	---
X4 (v4.5.4)	---[2]	✓	✓	✓	✓	---[3]	---[3]	---[3]	---[3]	---	---	---	---
X4 (v4.5.5)	---[2]	✓[4]	✓[4]	✓	✓	---[3]	---[3]	---[3]	---[3]	---[3]	---[3]	---	---
X4 (v4.6.0)	X	---[3]	---[3]	✓	✓	---[3]	---[3]	---[3]	---[3]	---	---[3]	---	---
X4 (v4.6.1)	X	---[3]	---[3]	✓	✓	---[3]	---[3]	---[3]	---[3]	---	---[3]	---	---
X4 (v4.6.2)	X	---	---	✓	✓	---	---	---	---	---	---	---[3]	---[3]
X4 (v4.6.3)	X	---	---	✓	✓	---	---	---	---	✓	✓	---	---
X4 (Free)[1]	X	---[3]	---[3]	---[3]	✓	---[3]	---[3]	---[3]	---[3]	---[3]	---[3]	---	---

PSCAD / Windows Operating System Compatibility

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

1. Compatibility for this edition is subject to change, with the listed configuration applicable as of February, 2020.
2. Although not officially supported, this version has been shown to work with Windows XP 32-bit (Service Pack 3) and Windows XP 64-bit (Service Pack 2).
3. Although not officially supported, this combination has worked for some customers and/or on our test machines.
4. Service Pack 1
5. Lock-based PSCAD licensing is not supported in a cloud desktop environment.
6. During the PSCAD installation, when prompted to install Microsoft .NET 2 and .NET 3.5 Frameworks, elect to skip these, as they are not supported on Windows 10. Testing has shown that the PSCAD installation will proceed without them, and GFortran 4.2 compiling will work.

1.b Supported Operating Systems – Standalone License Manager

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

License Manager \ Windows	Windows XP	Windows Vista (32/64-bit)	Windows 7 SP0	Windows 7 SP1		Windows 8		Windows 8.1		Windows 10		Windows Server 2008 R2 SP1	Windows Server 2012 R2	Windows Server 2016
				32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit			
LM 1.28 (at PSCAD v4.3)	---	---	---	✓	✓	---	---	---	---	X	X	---	---	---
LM 1.29 (at PSCAD v4.4.0)	---	---	---	✓	✓	---	---	---	---	X	X	---	---	---
LM 1.30 (at PSCAD v4.4.1)	---	---	---	✓	✓	---	---	---	---	X	X	---[1]	---	---
LM 1.31 (at PSCAD v4.5.0)	---	---	---	✓	✓	---	---	---	---	X	X	---	---	---
LM 1.32 (at PSCAD v4.5.1)	---	---	---	✓	✓	---	---	---	---	X	X	---	---	---
LM 1.33 (at PSCAD v4.5.2)	---	---	---	✓	✓	---	---	---	---	X	X	---[1]	---	---
LM 1.34 (at PSCAD v4.5.3)	---	---	---	✓	✓	---	---	---	---	X	X	---[1]	---	---
LM 1.35 (at PSCAD v4.5.4)	---	---	---	✓	✓	---	---	---	---	X	X	---	---	---
LM 1.36/1.41 (at PSCAD v4.6.0)	---	---	---	✓	✓	---	---	---	---	X	X	---	---	---
LM1.37 (with PSCAD v4.5.5)	---	---	---	✓	✓	---	---	---	---	---[1]	---[1]	---[1]	---	---
LM 1.42 (with PSCAD v4.6.1)	---	---	---	✓	✓	---	---	---	---	---[1]	---[1]	---	---	---
LM 1.43 (with PSCAD v4.6.2)	X	---	---	✓	✓	---	---	---	---	✓	✓	---[1]	---[1]	---
LM 1.44 (with PSCAD v4.6.3)	X	X	X	✓	✓	---[1]	---[1]	---[1]	---[1]	✓	✓	---[1]	---[1]	---[1]

License Manager / Windows Operating System Compatibility

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

1. Although not officially supported, this combination has been shown to work (both internally and on customer machines).

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

The following matrix illustrates the compatibility history of Microsoft Visual C++ Redistributables with PSCAD, including released and non-released versions.

Visual C++ Redistributables / PSCAD Versions	2008	2010	2015	2017
4.2.0	X	X	X	X
4.2.1 (2006)	X	X	X	X
4.2.1 (2007)	X	X	X	X
X4 (4.3.0)	✓	X	X	X
X4 (4.3.1)	✓	X	X	X
X4 (4.4.0)	X	✓	X	X
X4 (4.4.1)	X	✓	X	X
X4 (4.5.0)	X	✓	X	X
X4 (4.5.1)	X	✓	X	X
X4 (4.5.2)	X	✓	X	X
X4 (4.5.3)	X	✓	X	X
X4 (v4.5.4)	X	✓	X	X
X4 (v4.5.5)	X	✓	X	X
X4 (v4.6.0)	X	✓	X	X
X4 (v4.6.1)	X	✓	X	X
X4 (v4.6.2)	X	X	✓	✓ [2]
X4 (v4.6.3)	X	X	✓	✓ [2]
X4 (Free)[1]	X	X	✓	✓ [2]

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 February, 2020.
2. Visual C++ 2015 and 2017 Redistributables may not co-exist on the same machine; the 2017 version will over-write the 2015 version. Only one of these two Redistributables versions is required for running the listed PSCAD versions.

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

The following matrix lists the versions of Microsoft Visual C++ Redistributables released with Microsoft Visual Studio.

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.*** 14.11.*** 14.12.*** 14.13.*** 14.14.*** 14.15.*** 14.16.***
2019 (v16)	*MS Visual C++ 2019 Redistributables*	14.20.*** 14.21.***

1.e Supported Operating Systems – FORTRAN Compilers

The following matrix illustrates the compatibility history of Windows Operating Systems with Fortran compilers.

(As determined per Intel Parallel Studio XE Release Notes)

Compiler	Windows XP	Windows Vista	Windows 7	Windows 8	Windows 8.1	Windows 10	Windows Server 2016	Windows Server 2019
Compaq Visual Fortran 6.5	✓	---	[1]	---	---	[1]		
Intel Visual Fortran:	✓	✓	✓	---	---			
9						---		
10						---		
11						✓[3]		
Intel Fortran Composer XE:	✓	✓	✓	---	---	✓		
12 (2011)								
13 (2013)								
14 (2013 SP1)								
Intel Parallel Studio XE:	---	---	✓	---	---	✓		
15 (2015)								
16 (2016)								
17 (2017)								
18 (2018)								
19 (2019)								
19.1 (2020)							✓	✓
GNUFortran	✓	✓	✓	---	---	---		
GFortran 4.2.1	✓	✓	✓	---	---	✓		
GFortran 4.6.2	---	---	✓	---	---	✓		

FORTRAN Compiler / Windows Operating System Compatibility

✓ Tested, should work
--- Not tested – Unknown[2]

1. Some users have reported difficulties with this installation. Refer to this article for details and setup tips.
2. Refer to this article when attempting to run older third-party software on a newer Windows operating system.
3. Prompted to install .NET 3.5 Framework during this installation. With Internet connection, the installer easily performs this installation.

2.a Supported Fortran Compilers with PSCAD

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

Fortran Compiler[2] / PSCAD Released Versions	Digital Fortran v5	Compaq Visual Fortran v6	GNU Fortran v77	GFortran 95 v4.2.1	GFortran 95 v4.6.2	Intel Visual Fortran 9	Intel Visual Fortran 10	Intel Visual Fortran 11	Intel Fortran Composer XE[3] 2011 12[3]	Intel Fortran Composer XE[3] 2013 13[3]	Intel Fortran Composer XE[3] (SP1) 14[3]	Intel Parallel Studio XE Composer Edition for Fortran 2015 15[3] 32-bit	2015 15[3] 64-bit	2016 16[3] 32-bit	2016 16[3] 64-bit	2017 17[3] 32-bit	2017 17[3] 64-bit	2018 18[3] 32-bit	2018 18[3] 64-bit	2019 19[3][7] 32-bit	2019 19[3][7] 64-bit
4.1.0	✓	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.1.1	✓	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.2.0	✓	✓	✓	X	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.2.1	✓	✓	✓	X	X	✓	[5]	[5]	[5]	[5]	[5]	[5]	X	[4]	X	---	X	X	X	X	X
X4 (4.3.0)	X	✓	X	✓	X	✓	✓	✓	[5]	[5]	[5]	[5]	X	[5]	X	---	X	X	X	X	X
X4 (4.3.1)	X	✓	X	✓	X	✓	✓	✓	[5]	[5]	[5]	[5]	X	[5]	X	---	X	X	X	X	X
X4 (4.4.0)	X	✓	X	✓	X	✓	✓	✓	✓	[5]	[5]	[5]	X	[5]	X	---	X	X	X	X	X
X4 (4.4.1)	X	✓	X	✓	X	✓	✓	✓	✓	[5]	[5]	[5]	X	[5]	X	---	X	X	X	X	X
X4 (4.5.0)	X	✓	X	✓	X	✓	✓	✓	✓	[5]	[5]	[5]	X	[4]	X	---	X	[6]	X	X	X
X4 (4.5.1)	X	✓	X	✓	X	✓	✓	✓	✓	[5]	[5]	[5]	X	[4]	X	---	X	[6]	X	X	X
X4 (4.5.2)	X	✓	X	✓	X	✓	✓	✓	✓	✓	[5]	[5]	X	[4]	X	---	X	[6]	X	X	X
X4 (4.5.3)	X	✓	X	✓	X	✓	✓	✓	✓	✓	[5]	[5]	X	[4]	X	---	X	[6]	X	X	X
X4 (4.5.4)	X	✓	X	✓	X	✓	✓	✓	✓	✓	[5]	[5]	X	[4]	X	---	X	[6]	X	X	X
X4 (4.5.5)	X	✓	X	✓	X	✓	✓	✓	✓	✓	[5]	[5]	X	[4]	X	---	X	[6]	X	X	X
X4 (v4.6.0)	X	X	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	---	[4]	---	[4]	[6]	[4]	X	X
X4 (v4.6.1)	X	X	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	---	[4]	---	[4]	[6]	[4]	[4][8]	[4][8]
X4 (v4.6.2)	X	X	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	---	---	---	---	[6]	[4]	[4][8]	[4][8]
X4 (v4.6.3)	X	X	X	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	---	---	---	---	[4]	[4]	[4]	[4]
X4 (Free)[1]	X	X	X	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

✓ Officially Supported – Tested, should work

X Not Officially Supported – Tested, will not work

--- Unknown – Not tested

1. Compatibility for this edition is subject to change, with the listed configuration applicable as of February, 2020.
2. Compatible Fortran compilers must be used when building a project when linking in any pre-compiled files (.obj, .o, or .lib) (see Chart #3).
3. For PSCAD v4.5.0 to v4.5.3, and when Linking in a Library with this Intel Version: There is a compatibility issue with the emtdc.cfg. You may either update your software to v4.5.4 or later, or retain this same PSCAD version, but contact support@pscad.com for a replacement emtdc.cfg file.
4. Not officially supported, but works on our test machine.
5. Not officially supported, but probably works.
6. Not officially supported, but works on our test machine. Requires a special build of the "fortran_compilers.xml" file. This file will be available within later PSCAD builds (i.e. PSCAD v4.6.3+); for earlier versions of PSCAD (v4.5.0 to v4.6.2), users holding a valid license may obtain this file from our Support Desk (support@pscad.com).
7. The reason Intel 19 is not compatible with PSCAD v4.6.0 and earlier is because Intel 19 is supported with Visual Studio 2015+, which is not supported with PSCAD v4.6.0 and earlier.
8. PSCAD v4.6.2 and earlier is not supported with Visual Studio 2017. To use Visual Studio 2017, update to PSCAD v4.6.3+, Or to use PSCAD v4.6.2-, downgrade to Visual Studio 2015.
9. Supported only with Microsoft Visual Studio 2013 and older.

10. Supported with Microsoft Visual Studio 2013 and older, and with Microsoft Visual Studio 2015 and newer.
11. Supported only with Microsoft Visual Studio 2015 and newer.

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

The following matrix illustrates the compatibility between PSCAD and IVF/VS, along with the specified program folders and reconfiguration capability.

PSCAD Program Folder[1]	Applicable Versions of IVF	Applicable Versions of Visual Studio	Whether PSCAD can be Toggled[2]
v4.6.0			
IF12	IVF12 IVF13 IVF14	VS 2013 (and older)	X
v4.6.1 to v4.6.3			
IF12	IVF12 IVF13 IVF14	VS 2013 (and older)	X
IF15	IVF15 IVF16 IVF17 IVF18 IVF19	VS 2010 (and newer)	✓

1. When PSCAD is installed, these folders are installed to the following location:
   C:\Program Files (x86)\PSCADxxx\emtdc\

2. Some versions of PSCAD can 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.

2.c Supported Visual Studio Versions

The following matrix 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)
4.2.1	✓	✓	✓	--- [1]	✓	X	X	X
X4 (4.3.0)	✓	✓	✓	--- [1]	✓	X	X	X
X4 (4.3.1)	✓	✓	✓	--- [1]	✓	X	X	X
X4 (4.4.0)	✓	✓	✓	--- [1]	✓	X	X	X
X4 (4.4.1)	✓	✓	✓	--- [1]	✓	X	X	X
X4 (4.5.0)	---	✓	✓	--- [1]	✓	X	X	X
X4 (4.5.1)	---	✓	✓	--- [1]	✓	X	X	X
X4 (4.5.2)	---	✓	✓	--- [1]	✓	X	X	X
X4 (4.5.3)	---	✓	✓	--- [1]	✓	X	X	X
X4 (4.5.4)	---	✓	✓	--- [1]	✓	X	X	X
X4 (4.5.5)	---	✓	✓	--- [1]	✓	X	X	X
X4 (v4.6.0)	---	---	✓	--- [1]	✓	X	X	X
X4 (v4.6.1)	---	---	✓	--- [1]	✓	✓	X	X
X4 (v4.6.2)	---	---	✓	--- [1]	✓	✓	X	X
X4 (v4.6.3)	---	---	✓	--- [1]	✓	✓	✓	✓
X4 (Free)	X	X	X	X	X	X	X	X

✓ 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.

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

If any pre-compiled objects or libraries will be called within a project using a particular version of compiler, a compatible compiler must be used when running the project itself:

May run project with this / Pre-compiled using this	Intel® Visual Fortran			Intel® Fortran Composer XE			Intel® Parallel Studio XE Composer Edition for Fortran										Compaq	GNU-Fortran	GFortran 4.2.1	GFortran 4.6.2
							v15 (2015)		v16 (2016)		v17 (2017)		v18 (2018)		v19 (2019)					
	v9	v10	v11	v12 2011	v13 2013	v14 2013 SP1	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	Visual Fortran 6			
Compaq 6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✓	X	X	X
Intel 9	✓	✓	✓	✓	✓	✓	✓	X	✓	X	---	X	---	X	---	X	X	X	X	X
Intel 10	---	✓	✓	✓	✓	✓	✓	X	✓	X	---	X	---	X	---	X	X	X	X	X
Intel 11	---	---	✓	✓	✓	✓	✓	X	✓	X	---	X	---	X	---	X	X	X	X	X
Intel 12	---	---	---	✓	✓	✓	✓	X	✓	X	---	X	---	X	---	X	X	X	X	X
Intel 13	---	---	---	---	✓	✓	✓	X	✓	X	---	X	---	X	---	X	X	X	X	X
Intel 14	---	---	---	---	---	✓	✓	X	✓	X	---	X	---	X	---	X	X	X	X	X
Intel 15 (32-bit)	---	---	---	---	---	---	✓	X	✓	X	✓	X	✓	X	✓	X	X	X	X	X
Intel 15 (64-bit)	X	X	X	X	X	X	X	✓	X	✓	X	✓	X	✓	X	✓	X	X	X	X
Intel 16 (32-bit)	---	---	---	---	---	---	---	X	✓	X	✓	X	✓	X	✓	X	X	X	X	X
Intel 16 (64-bit)	X	X	X	X	X	X	X	---	X	✓	X	✓	X	✓	X	✓	X	X	X	X
Intel 17 (32-bit)	---	---	---	---	---	---	---	X	---	X	✓	X	✓	X	✓	X	X	X	X	X
Intel 17 (64-bit)	X	X	X	X	X	X	X	---	X	---	X	✓	X	✓	X	✓	X	X	X	X
Intel 18 (32-bit)	---	---	---	---	---	---	---	X	---	X	---	X	✓	X	✓	X	X	X	X	X
Intel 18 (64-bit)	X	X	X	X	X	X	X	---	X	---	X	---	X	✓	X	✓	X	X	X	X
Intel 19 (32-bit)	---	---	---	---	---	---	---	X	---	X	---	X	---	X	✓	X	X	X	X	X
Intel 19 (64-bit)	X	X	X	X	X	X	X	---	X	---	X	---	X	---	X	✓	X	X	X	X
GNUFortran	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✓	X	X
GFortran 4.2.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✓	X
GFortran 4.6.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✓

✓ Compatible
X Not compatible
-- Not tested, might work
-

3.b Calling Pre-compiled Objects or Libraries – Changes as of Microsoft Visual Studio v2015 and later

Due to some changes made to the libraries as of Microsoft® Visual Studio 2015:

- If a PSCAD object or library containing c-code was pre-compiled using VS2010, VS2012, VS2013, it is not supported with VS2015 (and later).
- If a PSCAD object or library containing c-code was pre-compiled using VS2015 (and later), it is not supported with VS2010, VS2012, VS2013.

However:

- If a PSCAD object or library not containing c-code was pre-compiled using VS2015 (and later), it should work with VS2010, VS2012, VS2013.
- If a PSCAD object or library not containing c-code was pre-compiled using VS2010, VS2012, VS2013, it should work with VS2015 (and later).

4. Intel Fortran Compilers and Visual Studio Compatibility

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

Intel Fortran Compiler / Visual Studio (Microsoft)[1]	Intel® Visual Fortran						Intel® Fortran Composer XE			Intel® Parallel Studio XE Composer Edition for Fortran											
							2011	2013	2013 (SP1)	2015		2016		2017		2018		2019		2020	
							v12.0/ v12.1	v13.0/ v13.1	v14.0	v15		v16[4]		v17[4]		v18		v19.0		v19.1[19]	
	v9.0	v9.1	v10.0	v10.1	v11.0	v11.1				32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit	32-bit	64-bit
2002	PSCAD✓ IVF ✓	PSCAD✓ IVF ✓	PSCAD✓ IVF X	PSCAD X IVF X	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2003	PSCAD✓ IVF ✓	PSCAD ✓ IVF ✓	PSCAD✓ IVF ✓	PSCAD X IVF ✓	--- IVF ✓	--- IVF ✓	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2005 (v8)	PSCAD X IVF X	PSCAD X IVF ✓	PSCAD✓ IVF ✓	PSCAD✓ IVF ✓	---[2] IVF ✓	--- IVF[✓	--- IVF ✓[13]	--- IVF X	---	---	---	---	---	---	---	---	---	---	---	---	---
2008 (v9)	PSCAD X ---	PSCAD X ---	PSCAD X ---	PSCAD✓ IVF ✓	--- IVF ✓	--- IVF ✓	---[3] IVF ✓	--- IVF ✓	---	--- IVF X	--- IVF X	---	---	---	---	---	---	---	---	---	---
2010 (v10)	PSCAD X ---	PSCAD X ---	PSCAD X ---	---	---	---	--- IVF ✓	PSCAD✓ IVF ✓	PSCAD✓ IVF ✓	PSCAD✓ IVF ✓	PSCAD✓ IVF ✓	--- s	--- IVF ✓	---	---	---	---	---	---	---	---
2012 (v11)[7]	---	---	---	---	---	---	---	---[7] IVF ✓	---[7] IVF ✓	---[7] IVF ✓	---[7] IVF ✓	---[7] IVF ✓	---[7] IVF ✓	---[7] IVF ✓	---[7] IVF ✓	--- IVF X	--- IVF X	---	---	---	---
2013 (v12)	---	---	---	---	---	---	---	---	--- IVF ✓	---[2] IVF ✓[12]	---[2] IVF ✓[12]	---[4] IVF ✓	---[4] IVF ✓	--- IVF ✓	--- IVF ✓	[17] IVF ✓	[17] IVF ✓	[17] IVF ✓	[17] IVF ✓	---	---
2015 (v14)[6]	---	---	---	---	---	---	---	---	---	PSCAD✓ IVF ✓ [5]	PSCAD✓ IVF ✓ [5]	---[4] IVF ✓	---[4] IVF ✓	---[4] IVF ✓	---[4][14] IVF ✓	[4] IVF ✓	[4][9] IVF ✓	[4] IVF ✓	[4] IVF ✓	---	---
2017 (v15)[6][10]	---	---	---	---	---	---	---	---	---	---	---	---	---	---[10] IVF ✓[8]	---[10] IVF ✓[8]	[10] IVF ✓	[10] [16] IVF ✓	[4][10] [11][15] IVF ✓	[4][10] [11][15] IVF ✓	[4][10] [11][15] IVF ✓	[4][10] [11][15] IVF ✓
2019 (v16)[6][10]	---	---	---	---	---	---	---	---	---	---	---	---	---	PSCAD X IVF X	PSCAD X IVF X	PSCAD X IVF X	PSCAD X IVF X	PSCAD [10][18] IVF[18]	PSCAD [10][18] IVF[18]	**[4][10]** IVF ✓	**[4][10]** 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 commercial VS version containing a C-compiler must be installed. If projects do not contain C-code or components using DLLs, the free VS Premier Partner edition (aka "Shell Edition") that comes bundled with a licensed edition of Intel Fortran is sufficient.
   Note:
   As of Intel Fortran 2019 Update 3 and later, the Microsoft Visual Studio Shell Edition no longer comes bundled with a licensed edition of Intel Fortran.
2. Although not verified, some users have successfully used this combination with PSCAD.
3. This compiler/Visual Studio combination appears to work on our test computers without any problems, but our support may be limited.
4. Not officially supported, but appears to work on test machines.
5. Microsoft Visual Studio 2015 is supported with Intel Fortran 15 Update 5 and newer (15.0.5.280+).
   Note: One customer was able to run IVF15 Update 4 (15.0.4.221) and VS 2015.
6. Notes about Visual Studio 2015 and later:
   a. This software combination is applicable to PSCAD v4.6.1 and later.
   b. Perform required adjustments as per Section 7.36 of Resolving Issues.
   c. If installing the Professonal Edition, ensure that the following options are SELECTED during the installation in order to be able to compile PSCAD cases using the Intel Fortran compiler:

7. 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.
8. Intel supports Microsoft Visual Studio 2017 with Intel Fortran 17 Update 4 and later (17.0.4.210+).
9. The following combination worked on a customer's machine: Intel Fortran 18.0.156, Visual Studio 2015 Professional Edition, PSCAD v4.6.2.
10. Microsoft Visual Studio 2017+ requires PSCAD v4.6.3 and later.
11. Specifically, this worked on a Windows 10 machine.
12. Intel supports Microsoft Visual Studio 2013 Community Edition with Intel Fortran 15 Update 2 and later (15.0.2.179+).
13. Intel supports Microsoft Visual Studio 2005 with Intel Fortran v12.0 Updates 0 to 4 (12.0.0.104 to 12.0.4.196). Support dropped as of v12.0 Update 5 (12.0.5.221).
14. In addition to Visual Studio 2015 Professional Edition being officially supported with Intel 17, Intel 17.0.210 also worked with Visual Studio Community Edition 2015 on a customer's machine.
15. In addition to Visual Studio 2017 Professional Edition being officially supported with Intel 19, Intel 19 also worked with Visual Studio Community Edition 2017 on a customer's machine.
16. In addition to Visual Studio 2017 Professional Edition being officially supported with Intel 18, Intel 18.0.185 also worked with Visual Studio Community Edition 2017 on a customer's machine.
17. Not supported with Visual Studio 2013 and earlier with upcoming PSCAD v5 release.

18. Visual Studio 2019 is supported with Intel 19 Update 4+ (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 Update 5 and VS 2019 Community Edition.
19. Can be used to compile PSCAD v4.6.3 projects.

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

The following matrix lists the v

ersion of Microsoft Visual Studio Shell (or 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. 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).

Intel Fortran Compiler / VisualStudio (Microsoft)	Intel® Visual Fortran				Intel® Fortran Composer XE				Intel® Parallel Studio XE Composer Edition for Fortran									
							2013		2015		2016		2017		2018		2019	
	9.0/ 9.1[1]	10.0/ 10.1	11.0	11.1	2011 12.0	2011 12.1	13.0/ 13.1	2013 (SP1) 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	64-bit 19
2002																		
2003																		
2005 (v8)		✓	✓															
2008 (v9)				✓	✓													
2010 (v10)						✓	✓	✓	✓	✓								
2012 (v11)[2]																		
2013 (v12)											✓	✓	✓	✓				
2015 (v14)															✓	✓	✓[3]	✓[3]

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

1. No version of Visual Studio comes bundled with Intel 9.
2. This version of Visual Studio does not come bundled with any version of Intel Fortran.
3. As of Intel Fortran 2019 Update 3 and later, the Microsoft Visual Studio Shell Edition no longer comes bundled with a licensed edition of Intel Fortran.

6. Supported MATLAB and Fortran Compiler Compatibility Chart

The following matrix represents known compatibility between MATLAB and Fortran compilers.

MATLAB Versions	GFortran 95	Compaq Visual Fortran 6	Intel Visual Fortran 9	Intel Visual Fortran v10	Intel Visual Fortran v11	Intel Fortran Composer XE 2011 v12	Intel Visual Fortran Composer XE 2013 v13	Intel Visual Fortran Composer XE 2013 (SP1) v14	Intel Parallel Studio XE Composer Edition for Fortran 2015 (32-bit) v15	2015 (64-bit) v15	2016 (32-bit) v16	2016 (64-bit) v16	2017 (32-bit) v17	2017 (64-bit) v17	2018 (32-bit) v18	2018 (64-bit) v18	2019[7] (32-bit) v19	2019[7] (64-bit) v19	2020 (32-bit) v19.1	2020 (64-bit) v19.1
R2006a, 7.2 to R2007b, 7.5	X	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2008a, 7.6	X	X	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2008b, 7.7	X	X	✓	✓	X[3]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2009a, 7.8	X	X	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2009b, 7.9	X	X	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2010a, 7.10	X	X	X	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2010b, 7.11	X	X	X	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2011a, 7.12	X	X	X	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2011b, 7.13	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
R2012b, 8	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
R2013b, 8.2	X	X	X	X	X	✓	✓	X	X	X	X	X	X	X	X	X	X	X	X	X
R2014a, 8.3	X	X	X	X	X	✓	✓	X	X[2]	X	X	X	X	X	X	X	X	X	X	X
R2014b, 8.4	X	X	X	X	X	✓	✓	✓	X[2]	X[2]	X	X	X	X	X	X	X	X	X	X
R2015a, 8.5	X	X	X	X	X[3]	✓	✓	✓	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
R2016a, 9.0 (64-bit)	X	X	X	X	X	X	X[4]	X[4]	X	✓[5]	X	✓[5]	X	X	X	X	X	X	X	X
R2016b, 9.1 (64-bit)	X	X	X	X	X	X	X[4]	X[4]	X	✓[5]	X	✓[5]	X	X	X	X	X	X	X	X
R2017a, 9.2 (64-bit)	X	X	X	X	X	X	X[4]	X[4]	X	✓[5]	X	✓[5]	X	✓[5]	X	X	X	X	X	X
R2017b, 9.3 (64-bit)	X	X	X	X	X	X	X[4]	X[4]	X	✓[5]	X	✓[5]	X	✓[5]	X	X	X	X	X	X
R2018a, 9.4 (64-bit)	X	X	X	X	X	X	X[4]	X[4]	X	X[6]	X	X[6]	X	X[6]	X	X	X	X	X	X
R2018b, 9.5 (64-bit)	X	X	X	X	X	X	X	X	X	X[6]	X	X[6]	X	X[6]	X	X[6]	X	X	X	X
R2019a, 9.6 (64-bit)	X	X	X	X	X	X	X	X	X	X[6]	X	X[6]	X	X[6]	X	X[6]	X	X[6]	X	X
R2019b, 9.7 (64-bit)	X	X	X	X	X	X	X	X	X	X	X	X	X	X[6]	X	X[6]	X	X[6]	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]

1. Although not supported, these combinations might work.
2. Internal testing has shown that these combinations work.
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. For PSCAD v4.6.0, contact support@pscad.com for special configuration instructions for this setup (not required as of v4.6.1).
6. Although this combination is supported by Mathworks, it is not supported with PSCAD at this time.

7. To be determined per Mathworks website (see above link). In the meanwhile, the following combination might work: PSCAD v4.6.3 | Intel Fortran 19 | Matlab R2017b.

7. PSCAD/MATLAB/Fortran Compiler Compatibility Chart

The following matrix represents compatibility of combining PSCAD, MATLAB, and FORTRAN compilers.

MATLAB Versions[1]	PSCAD v4.2.1	PSCAD X4 v4.3.0	PSCAD X4 v4.3.1	PSCAD X4 v4.4.0	PSCAD X4 v4.4.1	PSCAD X4 v4.5.0	PSCAD X4 v4.5.1	PSCAD X4 v4.5.2	PSCAD X4 v4.5.3	PSCAD X4 v4.5.4	PSCAD X4 v4.5.5	PSCAD X4 v4.6.0	PSCAD X4 v4.6.1	PSCAD X4 v4.6.2	PSCAD X4 v4.6.3
R2006a, 7.2	✓	---	---	---	---	---	---	---	---	---	---	---	---	---	---
R2006b, 7.3	✓	---	---	---	---	---	---	---	---	---	---	---	---	---	---
R2007a, 7.4	✓	---	---	---	---	---	---	---	---	---	---	---	---	---	---
R2007b, 7.5	✓	---	---	---	---	---	---	---	---	---	---	---	---	---	---
R2008a, 7.6	✓	---	---	---	---	---	---	---	---	---	---	---	---	---	---
R2008b, 7.7	✓	---	---	---	---	---	---	---	---	IVF 11.1[2]	---	---	---	---	---
R2009a, 7.8	X	---	---	---	---	---	---	---	---	---	---	---	---	---	---
R2009b, 7.9	X	---	---	---	---	---	---	---	---	---	---	---	---	---	---
R2010a, 7.10	X	IVF 11.1	---	---	---	---	---	---	---	---	---	---	---	---	---
2010b, 7.11	X	---	IVF 12.0	✓	---	---	---	---	---	---	---	---	---	---	---
R2011a, 7.12	X	---	---	IVF 12.0	---	---	---	---	---	---	---	---	---	---	---
R2011b, 7.13	X	---	---	---	IVF 12.1		---	---	---	---	---	---	---	---	---
R2012a, 7.14	X	---	---	---	---	IVF 13.0	---	---	---	---	---	---	---	---	---
R2012b, 8	X	---	---	---	---	---	---	IVF 13.0	IVF 13.0	IVF 13.0	---	---	---	---	---
R2013a, 8.1	X	---	---	---	---	IVF 13.1	IVF 13.1	IVF 13.1	---	---	---	---	---	---	---
R2013b, 8.2	X	---	---	---	---	IVF 14.0	IVF 14.0	IVF 14.0	IVF 14.0	---	---	---	---	---	---
R2014a, 8.3	X	---	---	---	---	---	---	---	---	IVF 14.0	---	IVF 14.0	---	---	---
R2014b, 8.4	X	---	---	---	---	---	---	---	---	IVF 15	IVF 15	IVF 15	---	---	---
R2015a, 8.5	X	---	---	---	---	---	---	---	---	IVF 11.0	---	---[7]	---	---	---
R2015b, 8.6	X	---	---	---	---	---	---	---	---	---	---	---	---	---	---
R2016a, 9.0[5]	X	X	X	X	X	X	X	X	X	X	X	IVF 15/16[3] VS 2010 IVF 17 (64-bit)[3] VS 2013	IVF 17[2] VS 2013	---	---
R2016b, 9.1	X	X	X	X	X	X	X	X	X	X	X	---[4]	IVF 16 VS2010	---	---
R2017a (9.2)	X	X	X	X	X	X	X	X	X	X	X	---	IVF 15 VS 2010	IVF 15 VS 2013	---
R2017b (9.3)	X	X	X	X	X	X	X	X	X	X	X	---	---	---	IVF 19 VS 2015[9]
R2018a (9.4)[8]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2018b (9.5)[8]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
R2019a (9.6)[8]	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Production Server	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

PSCAD/MATLAB/Fortran Compiler Compatibility

IVF #	This combination is compatible; the Intel Fortran compiler (IVF) version is identified
VS#	This is the Microsoft® Visual Studio version that was used.
✓	This combination is compatible; the Intel Fortran compiler version is not identified
X	This combination is not compatible
---	Not tested

1. PSCAD v4.5.5 and earlier is compatible with some 32-bit (not 64-bit) versions of Matlab. PSCAD v4.6 is compatible with some 32- and 64-bit versions.
2. This combination successfully run by a customer.
3. Contact support@pscad.com to request special “matlab_versions.xml” replacement file (already fixed in PSCAD v4.6.1).
4. This combination will likely work.
5. As of R2016A and later, Matlab is only available as a 64-bit application.

7. A customer reported that he was unable to run this combination with Matlab R2015a 64-bit.
8. Preliminary testing does not support PSCAD/Matlab co-simuation using MATLAB R2018 nor R2019 at this time.
9. This combination is expected to run.

8. Supported Licensing

The following matrix lists the compatibility history of PSCAD versions and corresponding supported licensing.

PSCAD Released Versions	Lock-based Licensing				Certificate Licensing
	License Manager Released Versions	Serial port locks	Parallel port locks	USB locks	
4.0.0[1]	1.16	✓	X	✓	X
4.0.X – 4.2.0[1]	1.17-1.25	✓	✓	✓	X
4.2.1 (2006) [1]	1.26	✓	✓	✓	X
4.2.1 (2007) [2]	1.27	✓	✓	✓	X
X4 (4.3.X)	1.28	X	✓	✓	X
X4 (4.4.0)	1.29	X	✓	✓	X
X4 (4.4.1)	1.30	X	X	✓	X
X4 (4.5.0)	1.31	X	X	✓	X
X4 (4.5.1)	1.32	X	X	✓	X
X4 (4.5.2)	1.33	X	X	✓	X
X4 (4.5.3)	1.34	X	X	✓	✓[3]
X4 (v4.5.4)	1.35	X	X	✓	✓
X4 (v4.5.5)	1.37	X	X	✓	✓
X4 (4.6.0)	1.36/1.41	X	X	✓	✓
X4 (4.6.1)	1.42	X	X	✓	✓
X4 (4.6.2)	1.43	X	X	✓	✓
X4 (4.6.3)	1.44	X	X	✓	✓
X4 (Free)	n/a	X	X	X	✓

✓ Security lock is supported

X Security lock is not supported

1. Support for this version is no longer available.
2. Support for this version with an Educational Edition license is no longer available.
3. Certificate Licensing is only supported with the Professional Edition for this PSCAD version; not supported with the Educational Edition.

DOCUMENT TRACKING

Rev.	Description	Date
0	made corrections to PSCAD 4.2.1 and 4.3.0	2011.Jun.06
1	added supported security locks	2011.Aug.15
2	added LM version for 4.5.0, Compaq no longer supported by Beta	2012.Apr.20
3	updated to PSCAD v4.5.1, added Free and Beta Editions, added new chart: PSCAD/MATLAB/Fortran Compiler Compatibility	2013.Apr.16
4	updated to PSCAD v4.5.2 release	2013.Sep.10
5	updated to PSCAD v4.5.3 release, updated to Matlab 13.b (8.2), improved compatibility information - Intel® Fortran compiler and Microsoft Visual Studio, minor corrections	2013.Dec.03
6	incorporated support for Intel 13.0, minor corrections and formatting improvements	2013.Dec.06
7	added compatibility information for VS 2008 and VS 2012	2014.Feb.27
8	updated to: PSCAD v4.5.4 release; release candidates v4.5.5 RC / v4.6.0 RC; Matlab 8.3 and 8.4 releases; Intel 14.1 and Intel 15 releases. added new GFortran 4.6.2; new Chart 8	2015.Feb.06
9	updated Chart 1 per Windows 8.1 testing	2015.Feb.13
10	correction to Chart 6, Matlab 2012b row	2015.Feb.14
11	correction to Chart 2, Intel 15 64-bit column	2015.Mar.25
12	incorporated support for Intel 14 and Intel 15 (32-bits)	2015.Mar.31
13	incorporated support for MS VS2010 in Chart 4; updated to: Matlab R2015a (8.5)	2015.Apr.20
14	incorporated further support for Intel 14 and 15; incorporated support for VS 2010 for IVF 13	2015.Apr.20
15	incorporated v4.6.0 release, and new v4.6.1 RC; update to Matlab R2015a (8.5)	2015.Jun.18
16	added Note 6 to Chart 2.	2015.Jul.08

Rev.	Description	Date
17	Update to Chart 4 (added VS 2015, added VS versions)	2015.Jul.28
18	Includes Intel 16 and VS 2013 and VS 2015	2015.Nov.02
19	Update to Matlab 8.6 release; Update to Matlab 7.7; Corrections to Charts 7 and 8	2015.Nov.18
20	Update to PSCAD v4.5.5 release; Update to Free Edition at v4.6	2015.Nov.30
21	Update to Chart 1	2015.Dec.07
22	Added 32/64-bit operating system comparisons to Chart 1; Added Alpha Edition to Charts 1, 7 and 8; Removed compatibility with 32-bit operating system for PSCAD Beta; Added reference to Window 10 to Chart 1	2016.Jan.08
23	Added new Chart 3, and renumbered all subsequent charts; Updated Chart 2 Note #4	2016.Jan.15
24	Updates to Chart#4	2016.Feb.22
25	Correction to Chart#4, IVF 15 and VS 2015 Added new Chart 5, moved related information from Chart 4, renumbered all subsequent charts	2016.Mar.11
26	Update to Chart#1: v4.1.1 on Windows 7 (64-bit); Update to Chart#4: compatibility for Visual Studio 2015; Update to Chart#5: update to Visual Studio bundled with Intel Fortran 11.1; Update to Chart#6: added Intel Fortran 16 and Matlab R2016a; Update to Chart#7: added Matlab R2016a; added support for 64-bit versions of Matlab at PSCAD v4.6	2016.May.31
27	Update to Chart#2: added PSCAD Alpha; Minor improvements throughout	2016.Jun.01
28	Update to PSCAD v4.6.1 release Update to Chart#4: added Note [2] to 2 combinations; Updated PSCAD Beta and Alpha to support 64-bit only; Minor corrections throughout	2016.Sep.12

Rev.	Description	Date
29	Incorporated Intel Fortran compiler v17 release (2017) Incorporated Matlab R2016b (9.1) release	2016.Oct.14
30	Updates to v4.6.1 release; Update to PSCAD v4.6.2 Release Candidate; Update to new Visual Studio 2015 fix at PSCAD v4.6.1	2016.Dec.30
31	Updates to Charts 1 and 7; Added product “Matlab Production Server”	2017.Jan.27
32	Updates to Charts 1 and 7	2017.Feb.23
33	Updates to Charts 1, 4 and 9	2017.Mar.06
34	Update to Matlab R2017a (9.2); Update to Chart 5; Minor corrections	2017.Jun.12
35	Update to v4.6.2 release	2017.Jun.13
36	New Chart #1.b; Updates to Chart #1.a	2017.Jun.30
37	Updates to Charts 4 and 5 re new release Visual Studio 2017	2017.Jul.27
38	Corrections to Chart 4	2017.Jul.31
39	New Chart 3.b; Renaming and updates to Chart 3.a	2017.Aug.30
40	Update to Chart 6	2017.Sep.01
41	Update to Intel Fortran 18 compiler (Charts 2, 3.a, 4 and 5); Update to Matlab R2017a (9.2) in Chart 6; Added Matlab R2017b (9.3) to Charts 6 and 7; Added Chart 1.c	2017.Oct.03
42	Update to Chart 4	2017.Dec.29

Rev.	Description	Date
43	Added new Chart 1.d; Update to Matlab R2018a (9.4) in Charts 6 and 7; Update to Intel Fortran 18 in Chart 6. Update for New Branding Guidelines	2018.May.15
44	Update to PSCAD v4.6.3 release and License Manager 1.44 release	2018.May.31
45	MHI rebranding Update to Section 1.d	2018.Jul.20
46	Update to Charts 1.b and 1.c Renumbered Chart 1.d to Chart 1.e. Added new Chart 1.d	2018.Aug.20
47	Update to Intel Fortran 19 compiler, in Charts 1.e, 2, 3.a, 4, 5, 6, 7; Correction to Charts 4 and 5; Update to MATLAB R2018b to Chart 6	2018.Nov.25
48	Update to Chart 4 (Intel Fortran 18 compiler and VS 2017 CE)	2018.Dec.13
49	Update to Charts 2 and 4	2019.Mar.27
50	Update to Chart 4 (Microsoft Visual Studio 2019) and Chart 1.d Corrections to Chart 4 Chart 5 (Microsoft VS Shell Edition no longer comes bundled with Intel Fortran (IVF 19 Update 3+))	2019.Jun.04
51	Updates per Visual Studio 2019: Charts 1.d, 4, 5; Updates per Intel Fortran 19: Charts 3.a, 4, 5; Updates per Matlab R2019a: Charts 6, 7; Updates per upcoming PSCAD v5.0 Release: Chart 3.b New PSCAD/Visual Studio chart: Chart 2.b	2019.Jul.23
52	Corrections to table formatting: Chart 3.a	2019.Jul.24
53	Corrections to Charts 2.a, 2.b, 3.b	2019.Jul.25
54	Updates to Chart 4	2019.Aug.14
55	Updates to Chart 4	2019.Dec.19
56	Updates per IVF 20 and R2019b releases; Renumbered Chart 2.b to 2.c; Added new Chart 2.b; Removed reference to PSCAD V5 Beta / Alpha Editions (moved to new V5 Compatibilities Charts);	2020.Feb.21

	Update to Chart 8	
57	Update to Charts 2.b and 2.c	2020.Mar.11