



## PSCAD Beta Edition – System Requirements

This document covers the requirements for installing, licensing, and running the unreleased PSCAD Beta Edition.

### 1. HARDWARE

Category	Recommendations
Computer <sup>[1]</sup>	Good motherboard with fast front-side speed 8 GB + of fast high quality RAM <sup>[2]</sup> Solid state hard drive 64 bit operating system (see Section 2) <sup>[3]</sup> 8 CPU cores (minimum 4) <sup>[4]</sup> with a decent CPU ranking Internet connection

### 2. USAGE

Category	Requirements
Operating System	Supported on the following 64-bit editions of Microsoft® Operating Systems: <sup>[3]</sup> <ul style="list-style-type: none"><li>Officially supported on Windows 7 SP1 64-bit 64-bit, Windows 10 64-bit</li><li>Other: Windows 11, Windows Server 2008 R2 SP1 or better, Windows Servers 2012/2016/2019/2022</li></ul> Note - It may be possible to run on a virtual machine. Contact <a href="#">support</a> for details. Not supported on any of the following Microsoft® Operating systems: <ul style="list-style-type: none"><li>A 32-bit edition</li><li>Windows XP, Windows Vista, Windows 7 SP0, Windows 8, Windows 8.1</li></ul>
Prerequisite Software	Microsoft® Visual C++ 2017 Redistributables, x86 and x64 <sup>[5]</sup> PSCAD Beta v5.0 and v5.1 - Microsoft® .NET Framework 4.8 <sup>[6]</sup>
Launching and Running	Microsoft® Windows User privileges
User Profile	Mandatory user profiles are not supported
Licensing	See Section 4
Third Party Software	A compatible FORTRAN compiler is required. For details, refer to the article <a href="#">Selecting your FORTRAN Compiler</a> .
Execution Permissions	The application executable files must be whitelisted in all protection software: <ul style="list-style-type: none"><li>For PSCAD:<ul style="list-style-type: none"><li>The path may be set generally, as: %PROGRAMFILES%\PSCAD&lt;version&gt;</li><li>Or, the path may be specified as: C:\Program Files (x86)\&lt;version&gt;\bin\win64\pscad.exe C:\Program Files (x86)\&lt;version&gt;\bin\win\tline.exe C:\Program Files (x86)\&lt;version&gt;\utilities</li></ul></li><li>For the Intel® Parallel Studio Composer Edition for FORTRAN:</li></ul>



Execution Permissions (continued)	<p>%PROGRAMFILES%\Intel</p> <ul style="list-style-type: none"> <li>For Microsoft® Visual Studio:</li> </ul> <p>%PROGRAMFILES%\Microsoft Visual Studio &lt;version&gt;</p> <p>Allow the user execute permissions to the following within %SYSTEM32%:</p> <ul style="list-style-type: none"> <li>cmd.exe</li> <li>conhost.exe</li> </ul> <p>The executable files created by the application must be permitted in all protection software. See listing in Appendix F of <a href="#">Resolving Issues</a>.</p>
Folder Permissions	<p>The user must have full permissions for the following folder and sub-folders:</p> <ul style="list-style-type: none"> <li>Common Documents folder (e.g. C:\Users\Public\Documents)</li> </ul> <p>The following sub-folders will be created, and the user must have full permissions:</p> <ul style="list-style-type: none"> <li>C:\Users\&lt;Your_UserId&gt;\AppData\Local\Manitoba HVDC Research Centre</li> <li>C:\ProgramData\Manitoba HVDC Research Centre</li> </ul>
Communication Over TCP/IP	<p>This is required for PSCAD and the executables listed in <i>Execution Permissions</i> above for the purpose of simulation control and data collection for plots.</p>
Network Ports	<p>Ports 30,000 to 40,000 must be available to allow PSCAD and EMTDC communication</p>

### 3.1 INSTALLATION – General

Category	Requirements
Registry Keys Permissions	<p>32-bit registry keys (used by PSCAD (64-bit)):</p> <ul style="list-style-type: none"> <li>HKCU\Software\Manitoba HVDC Research Centre\Pscad</li> <li>HKCU\Software\Manitoba HVDC Research Centre Inc\Pscad</li> <li>HKLM\Software\Manitoba HVDC Research Centre\Pscad</li> <li>HKLM\Software\Manitoba HVDC Research Centre Inc\Pscad</li> </ul> <p>64-bit registry keys (used by PSCAD (64-bit)):</p> <ul style="list-style-type: none"> <li>HKCU\Software\Manitoba HVDC Research Centre\Pscad</li> <li>HKCU\Software\Manitoba HVDC Research Centre Inc\Pscad</li> <li>HKLM\Software\Manitoba HVDC Research Centre\Pscad</li> <li>HKLM\Software\Manitoba HVDC Research Centre Inc\Pscad</li> </ul>

### 3.2 INSTALLATION – MyUpdater

Category	Requirements
General Requirements	As listed in Section 3.1
Access to Product Downloads	<p>Add the first or both of the following URLs to all anti-virus/firewall whitelists:</p> <p><a href="https://products.pscad.com">https://products.pscad.com</a></p> <p><a href="ftp://ftps.pscad.com">ftp://ftps.pscad.com</a></p>
Installing	<p>Microsoft® Windows Administrator privileges</p> <p>Internet connection</p>
Launching (to Install or Update Software)	<p>Microsoft® Windows Administrator privileges</p> <p>Internet connection</p>
Launching (to Uninstall Software)	<p>Microsoft® Windows Administrator privileges</p>



Launching (to Launch Installed Software)	Microsoft® Windows User privileges (unless otherwise specified)
Connection to Publication Server	Add the first or both of the following URLs to all anti-virus/firewall whitelists: <ul style="list-style-type: none"> <li>• http://publisher.pscad.com:80/</li> <li>• net.tcp://publisher.pscad.com:443/</li> </ul>
Supported Protocols	TLS 1.0, TLS 1.1, TLS 1.2

### 3.3 INSTALLATION – Installer Utility

Category	Requirements
General Requirements	As listed in Section 3.1  Any of the following Microsoft® Windows Operating Systems (64-bit editions <sup>[4]</sup> ): <ul style="list-style-type: none"> <li>• Preferred: Windows 7 SP1, Windows 10</li> <li>• Other: Windows 11, Windows Server 2008 R2 SP1 or better, Windows Servers 2012 / 2016 / 2019 / 2022</li> </ul> <p>Note - It may be possible to run on a virtual machine. Contact <a href="#">Support</a> for details.</p> <p>Not supported on Windows 7 SP0 or older, or Windows 8, or Windows 8.1</p>
Downloading	Internet connection
Running	Microsoft® Windows Administrator privileges  The user must have full permissions for the following path: C:\Users\Public\Documents\
Logging	The following sub-folders will be created, and the user must have full permissions: C:\Users\ <b>&lt;Your_UserID&gt;</b> \AppData\Local\Manitoba HVDC Research Centre\Installer

### 4 CERTIFICATE LICENSING<sup>[7]</sup>

Category	Requirements
Certificate	MyCentre user account with access to a licensed WorkGroup
Operational Requirements	Supported on a local desktop, or remote desktop, or over virtual private network (VPN). Not guaranteed in a cloud desktop environment, but could be verified using diagnostic tools.
Connection to the License Server	Add both of the following URLs to all anti-virus/firewall whitelists: <ul style="list-style-type: none"> <li>• http://licensing.pscad.com:80/Licensing</li> <li>• net.tcp://licensing.pscad.com:443/Licensing</li> </ul>
Activate/Release/Refresh a Certificate	Microsoft® Windows User Privileges  Internet connection
Using Certificates	The following sub-folders will be created for certificates: <ul style="list-style-type: none"> <li>• Path: C:\Users\user_id\AppData\Local\Manitoba Hydro International\Licensing\Licenses</li> <li>• Required permissions: FullControl for <b>&lt;Your_UserID&gt;</b></li> </ul> <p>The following sub-folder should already exist and will be used:</p> <ul style="list-style-type: none"> <li>• Path: C:\ProgramData\Microsoft\Crypto\RSA\MachineKeys</li> <li>• Required permissions: Read, Write for Everyone</li> </ul>
Supported Protocols	TLS 1.0, TLS 1.1, TLS 1.2



## 5. DIAGNOSTIC TOOLS

Category	Requirements
Running the Get Info tool	Microsoft® Windows User Privileges Internet connection is required if downloading the posted (current) version
Running the FORTRAN Medic Tool	Microsoft® Windows User Privileges Internet connection is required if downloading the posted (current) version
Viewing Log Files	Microsoft® Windows User Privileges

### Notes

1. PSCAD is a numerically intensive power system transients simulator; a fast and efficient personal computer is recommended for best results. To obtain specifications for extremely high workloads, please contact the PSCAD Support Desk for information ([support@mhi.ca](mailto:support@mhi.ca)).
2. Personal computers configured with slower processors and lesser RAM may be used, but slower execution performance will result. In other words, simulation speed increases with processor speed and amount of installed RAM.
3. The PSCAD Beta Edition is not supported on a 32-bit operating system.
4. Generally, the faster the better. We recommend an eight-core processor (or at least a four-core processor) to take advantage of Parallel and High Performance Computing (refer [here](#) and [here](#)). Additional licensed capabilities may be purchased to maximize these features. For more information, refer to the [Requirements](#) manuals or contact the Support Desk ([support@mhi.ca](mailto:support@mhi.ca)).
5. Both the 32-bit and 64-bit editions of Visual C++ Redistributables are required. If this prerequisite software is not already installed, the user will be prompted to install it when PSCAD is installed.
6. If the Microsoft® .NET Framework is not already installed, the user will be prompted to install it when PSCAD is installed.
7. The Fortran Medic Utility can be used to configure a machine for certificate licensing as per this [article](#).



## DOCUMENT TRACKING

Rev.	Description	Date
0	Initial	08/May/2019
1	Correction to title	31/May/2019
2	Multiple updates and improvements throughout	23/Jan/2020
3	Updated versions of Windows servers in Chart 2	22/Oct/2020
4	Update to folder permissions in Chart 4	27/Oct/2020
5	Update to title and addition of introductory sentence Update to Chart 1 – added Beta Edition versions Update to Note 6	07/Dec/2022
6	Update to Chart 2	08/Dec/2022