



PSCAD™

Software Installation and Licensing

Written for:

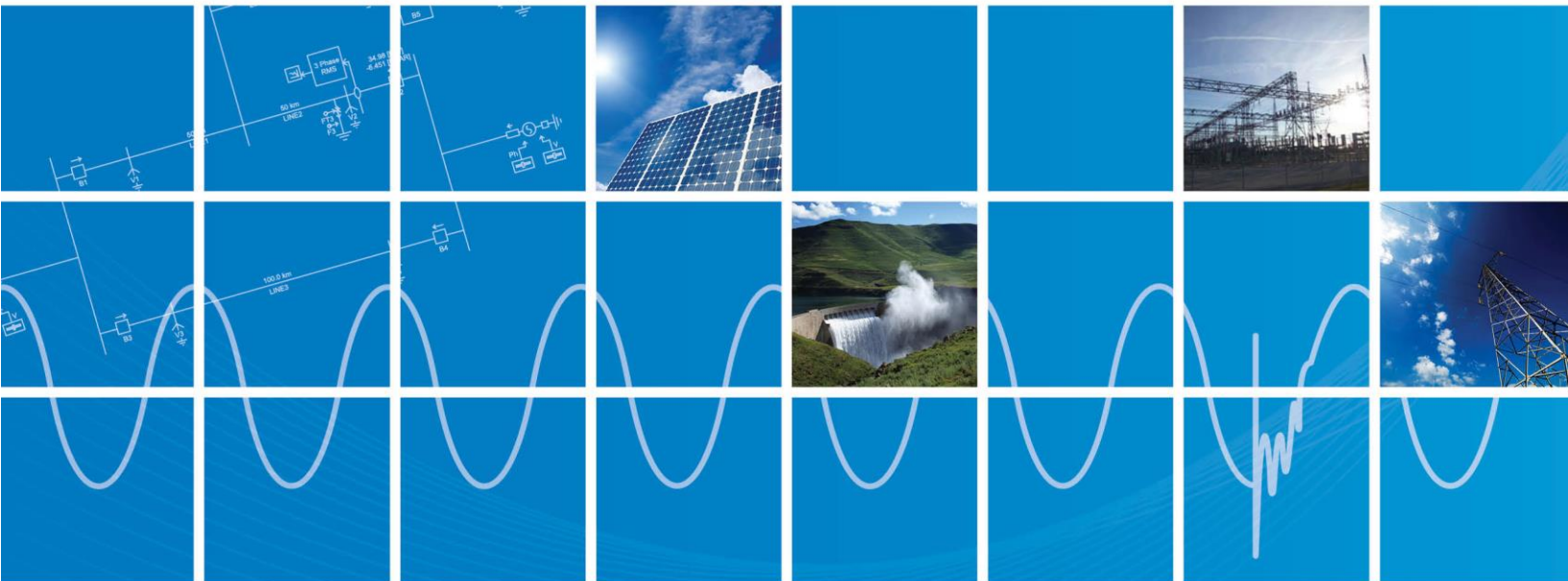
PSCAD X4 Version 4.5 (v4.5.0 to v4.5.5)

PSCAD X4 Version 4.6 (v4.6.0 to v4.6.3)

Legacy Lock-Based Licensing

May 27, 2019

Revision: 18





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1. Introduction

1.1 Scope

This manual provides software installation and licensing configuration instructions for PSCAD and associated software.

Instructions for installing the following software are included:

- All PSCAD X4 releases for v4.5 (v4.5.0 to v4.5.5) and v4.6 (v4.6.0 to v4.6.3), for Professional and Educational Editions.
- Standalone License Manager releases v1.31 to v1.44 (also known as simply "License Manager")

Note

The License Manager is installed only when running a license that has multiple PSCAD seats and/or is being shared with client machines over the network.

- GFortran compilers v4.2.1 and v4.6.2
- Sentinel Drivers 7.5.9
- Prerequisite software (Microsoft Visual C++ and .NET Framework)

Refer to Section 1.2 for software description.

This manual covers "Lock-Based Licensing", which is a type of "Legacy Licensing". Lock-based licensing uses a combination of USB lock and license database file to validate licensing.

Licensing configuration instructions for PSCAD are included. No licensing is required for remaining software.

Notes

1. If you are using the PSCAD Free Edition, refer instead to this [webpage](#).
2. If you are using certificate licensing, refer instead to this [webpage](#).



1.2 Software

This section provides a description of the software that is included in the PSCAD installation package.

PSCAD

PSCAD (Power Systems Computer Aided Design) is a powerful and flexible graphical user interface to the world-renowned, EMTDC electromagnetic transient simulation engine. PSCAD enables the user to schematically construct a circuit, run a simulation, analyse the results, and manage the data in a completely integrated, graphical environment. Online plotting functions, controls, and meters are also included, enabling the user to alter system parameters during a simulation run, and thereby view the effects while the simulation is in progress.

PSCAD comes complete with a library of pre-programmed and tested simulation models, ranging from simple passive elements and control functions, to more complex models, such as electric machines, full-on FACTS devices, transmission lines, and cables. If a required model does not exist, PSCAD provides avenues for building custom models.

GFortran 95 Compiler

A FORTRAN compiler is required for building a PSCAD project in order to view the simulation results. As such, two GFortran compilers are included in the installation package. GFortran v4.2.1 is compatible with PSCAD v4.5 and v4.6, and GFortran 4.6.2 is compatible with PSCAD v4.6. These compilers comply with the American National Standards Institute, ANSI 95. This software may be installed separately or alongside PSCAD, and does not require any additional licensing.

If you own a Professional or Educational PSCAD license, it is recommended that you use the Intel® Fortran Composer XE 2015 compiler. When compared with GFortran, Intel® Visual Fortran Composer is faster, has superior debugging capabilities, and is more frequently updated. As such, Intel is recommended over GFortran when running larger PSCAD cases, as typically found in commercial and educational environments. Intel Fortran is also compatible with MATLAB, whereas GFortran is not. For purchasing details, please contact our sales desk (sales@pscad.com).



Standalone License Manager

The License Manager is a custom License Manager Service developed by the PSCAD Development Team. It may be run on Windows Vista, 7, 8, 8.1, 10, and on Windows Server platforms. It supports x86 and x64 platforms, and communicates on UDP ports 2053 and 2054.

The License Manager is used to manage a license when one or both of the following conditions apply:

- The license will be shared with client computers over the network; and/or
- The license contains more than one PSCAD seat

The license manager is installed on the machine that is hosting the license, which may either be a license server or client machine.

Sentinel Drivers

Sentinel driver software is required as part of the PSCAD licensing authorization. The Sentinel drivers provide communication as follows:

- Between the USB lock and the License Manager when a license contains multiple seats and/or will be shared with client computers over the network, or
- Between the USB lock and the PSCAD application, when the License Manager is not used.

Sentinel Driver installer v7.5.7 was provided with the following software:
PSCAD v4.5.0 to v4.5.1 and License Manager v1.31 to v1.32

Sentinel Driver installer v7.5.8 was provided with the following software (and should also work with previous versions of PSCAD and License Manager):
PSCAD v4.5.2 to v4.5.4, and v4.6.0, and License Manager v1.33 to v1.36

Sentinel Driver installer v7.5.9 was provided with the following software (and should also work with previous versions of PSCAD and License Manager):
PSCAD v4.5.5, v4.6.1, v4.6.2, and v4.6.3, and for License Manager v1.37 and later

Note

If operating on Windows 10, Sentinel Driver 7.5.9 or better is required.

Microsoft Visual C++ and .NET Framework

This prerequisite software is required for running PSCAD. If the installation detects that this software is not installed, you will be prompted to authorize the installation.



1.3 Licensing

This section provides an overview of PSCAD Legacy Lock-based Licensing.

Notes

For information on Certificate Licensing, refer to resources on this [webpage](#).

Legacy lock-based licensing uses a combination of USB lock (dongle) and license database file to authorize licensing. The USB lock is a device that plugs into a standard USB port. The license database file is generated and saved to the host computer using a licensing utility and license text file.

Licensing may be hosted on a server and shared over the network with other machines, or it may be hosted locally on the same machine that is running the PSCAD software.

The licensing is encoded with the following features:

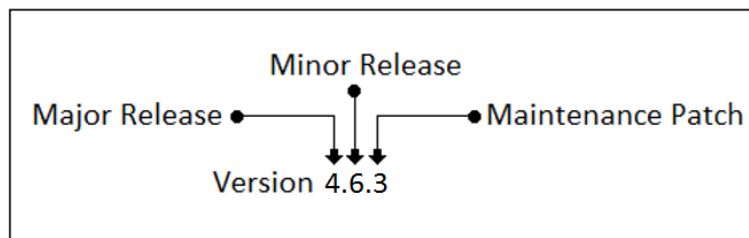
- **Products:**
 - PSCAD
 - Some older licenses may also contain E-TRAN and LiveWire
- **Professional vs Educational Edition:**
 - The Educational edition, available for educational facilities, provides all of the same features as the Professional edition, with some limitations.
 - To view the differences between these editions, please refer to resources posted on this [webpage](#).
- **Multi-user vs Single-user License:**
 - The Single-user license (SUL) allows a single instance of PSCAD to be run on the machine hosting the license.
Note
Although some customers currently own SULs, this type of license is no longer available for purchase as of February 2017.
 - The multi-user license (MUL) allows multiple instances of PSCAD to be run, up to the maximum number of seats on the license. Additionally, the license may be used to run PSCAD locally on the license host, and shared with client machines over a network.
- The number of PSCAD seats
- The product expiry date, if applicable

1.4 Release Numbering System

Software releases are identified by a numbering system, which is used to designate the release type. There are three types of release, as follows:

- A major release contains a significant number of new features and functionalities, such that it warrants a brand new product. These types of releases have historically occurred every several years (for example, version 3, version 4, etc.).
- A minor release typically provides a handful of new and enhanced features, but not enough to justify a new product. Minor releases may be released yearly (for example, version 4.5, version 4.6, etc.).
- A maintenance patch is purely a bug fix release. Patches may be released multiple times per year (for example, versions 4.6.1, 4.6.2, 4.6.3, etc.).

The numbering system is illustrated in the following image. The first number on the left represents the major release. The version 4 product was first released in 2003. The second number represents the minor release: version 4.6 was released in the spring of 2015. The third number represents the maintenance patch; there have been two maintenance patches in v4.6.



This manual provides instructions for updating to the latest minor releases and maintenance patches for PSCAD v4.5 and v4.6.



1.5 Changes to the Software

All changes made since v4.2 are listed in the manual “What’s new in PSCAD (all versions)”, which may be downloaded from this [webpage](#).

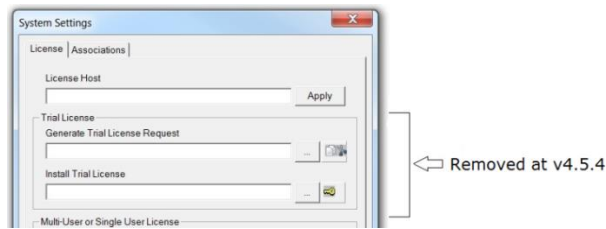
Please note the following additional changes related to software installation and licensing:

- a. On February 8, 2019, the PSCAD v4.6.3 Hot Fix 1 was released, and includes important updates to the EMTDC and Master Library. Details on this hotfix are listed in this [article](#).
- b. During the installation of v4.6.3, if a previous version in the 4.6 branch is detected, the user is prompted to select whether v4.6.3 overwrites the earlier software or is installed separately. In previous versions, the installation of a more recent version will always overwrite the earlier version within a branch, by default.
- c. The following minor change was made in the InstallShield Wizard at v4.6.2: The user is prompted to select either “Certificate Licensing” or “Lock-based self-licensing”, as applicable (previously, these were combined as a single option). See Section 2.3, Step (j).
- d. The prerequisite Microsoft Visual C++ Redistributable Package has been updated to 2015 at v4.6.2 (still at 2010 for earlier versions).
- e. The default number of Parallel Simulations used with [high performance computing features](#) has been increased from four to eight as of PSCAD v4.6.2 with a lock-based license (additional parallel simulations are available for sale (sales@pscad.com)).
- f. Single-user licensing (SUL), which supports local licensing and one software seat, will no longer be sold as of February, 2017. Instead, any new licenses will use one of two types of licensing, Multi-user licensing (see Section 1.3) or [Certificate licensing](#).
- g. New and improved License Manager v1.42 was released with PSCAD v4.6.1. This version features a simplified setup, along with greater flexibility and control. Licensing is no longer restricted to only those machines residing on the same network as the server. Network licensing is now available in three modes: self-licensing only, unrestricted licensing (available to any machine able to reach the host), and restricted licensing (only available to machines on specified networks). See Appendix A for more information and Section 2.5.2 for setup instructions.
- h. LiveWire software (Professional and Lite) has been removed from the PSCAD installation package as of the v4.6.1 release. This software may be downloaded and installed separately. Contact zsystems@gmail.com for more information.
- i. The license database file, previously only saved to C:\Windows, must also be saved to the following second location as of v4.6.0 and later.

C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager\



- j. The lockless trial licensing feature was removed from PSCAD at v4.5.4. Consequently, the “Trial License” fields were removed from the System Settings dialog box as well.



1.6 How to Use this Manual

Section 2 provides instructions for installing, adding and removing software. The PSCAD installation package will normally be used, but for multiple installations, a silent (unattended) installation may be run instead (Section 2.9).

Section 3 is related to configuring your license. Instructions are included for installing, activating, replacing, updating, sharing, and moving your license.

Section 4 provides instructions for obtaining assistance if any issues are encountered during software installation and licensing.

Appendix A provides an overview of networking requirements when licensing over a network, and when configuring the License Manager (refer also to Section 2.5.2).

Appendix B contains a listing of resources for new users, to help become familiar with PSCAD.



2. Software Installation and Removal

Section 2 provides instructions for installing and removing software.

2.1 System Requirements

2.1.1 Operating System

Microsoft® Windows 7 is officially supported.

Although not officially supported, the following operating systems have also been known to work:

For PSCAD v4.5: Windows® XP, Vista SP1, Win8, and Win10

For PSCAD v4.6: Windows® Vista SP1, Win8, and Win10

For the License Manager: Windows® XP, Vista, Win8, Win10,
and Windows Server 2008 R2, Windows Server 2016

2.1.2 Licensing Requirements – Licensing is shared over the Network

The following are requirements when sharing PSCAD licenses over a network:

- On the license host server and PSCAD client machines, ICMP Ping Echo and ICMP Ping Reply must be enabled on the Firewall.
- The protocol for communication between the server and clients is TCP/IP and UDP/IP on ports 2053 and 2054.
- The license database file must be installed on the server.
- The Sentinel USB lock must be plugged in on the server.
- Reliable internet or network connection.

Note

These requirements might not be satisfied when running the software in a cloud desktop environment.



2.1.3 Licensing Requirements – Licensing is not shared over the Network

The following are requirements when the PSCAD client machine is hosting the license, and it is not shared over the network:

- The license database file must be installed on the client machine.
- The Sentinel USB lock must be plugged in on the client machine.
- The PSCAD software must be installed and run on the client machine.

Note

These requirements might not be satisfied when running PSCAD in a cloud desktop environment.

2.1.4 Other Requirements

1. Windows administrative privileges to install if operating on Windows Vista or later
2. Internet connection
3. One USB 2.0 port, required for the hardware (USB lock). The lock is part of the licensing validation process. Refer to Section 1.3 for further information.



2.2 Determine your Installation

The table below can help with determining which products should be installed. This will depend on the machine, type of license, and whether any optional software will also be installed.

Type of Computer	Products								
	PSCAD	License Manager	GFortran Compiler v4.2.1	GFortran Compiler v4.6.2	Sentinel Drivers	Microsoft Visual C++	.NET Framework	USB Lock	License Text File
License Host (hosts and shares license)	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes
PSCAD Client (uses remote license)	Yes	^[1]	^[2]	^[2]	^[3]	Yes	Yes	No	No
PSCAD Client and Host (uses local license)	Yes	^[1]	^[2]	^[2]	Yes	Yes	Yes	Yes	Yes

Legend:
 Yes = Installation is required
 No = Installation is not required

¹Install the License Manager only if:

- This license will be used to run PSCAD v4.2.1 (license manager required for this version), and/or
- This license contains multiple seats and/or
- This license will be shared with other clients over a network

²This installation is optional. A FORTRAN compiler is required for running PSCAD cases. Install one or both of the free GFortran compilers if you do not own the commercially available Intel Fortran Composer. GFortran v4.2.1 is compatible with PSCAD v4.5 and v4.6. GFortran 4.6.2 is compatible with PSCAD v4.6.

³Not required on this computer; however, this is an automatic installation



2.3 Full Installation Procedure

This section provides instructions for installing the required software on a server or client machine using the InstallShield Wizard.

Notes

1. Before proceeding, refer to Section 2.1 for requirements, and to Section 2.2 to determine which products to install.
2. For v4.5.4 and later, if the software will be installed on numerous computers, you may prefer instead to perform the installations using one of the three “silent” (unattended) methods listed in Section 2.9.
3. On a computer running a 32-bit Windows operating system, only the 32-bit version of PSCAD will be installed. This version may be launched using the automatically generated shortcut in the Windows Start menu.
4. On a computer running a 64-bit Windows operating system, both the 32-bit and 64-bit versions of PSCAD will be installed. The 64-bit version may be launched using the automatically generated shortcut in the Windows Start menu.
5. If you encounter any installation issues, refer to Section 4.1.

Perform your installation as follows:

- a. If any instance of PSCAD is running, exit that application.
- b. In the installation files, right-click on “setup.exe”, and select “Run as administrator” if operating on Windows Vista or later (or select “setup.exe” if operating on Windows XP).

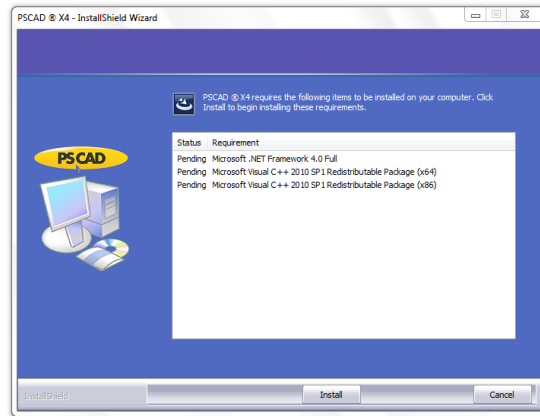
Note

The installation files should be saved to and run from a local drive rather than from a network drive.

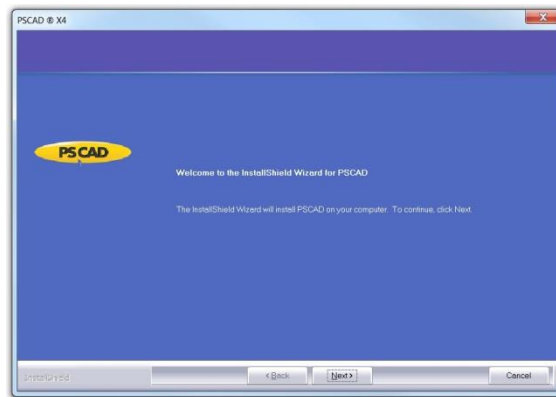
- c. When the “User Account Control” dialog box displays, select “Yes” to proceed with the installation. The InstallShield Wizard will launch.



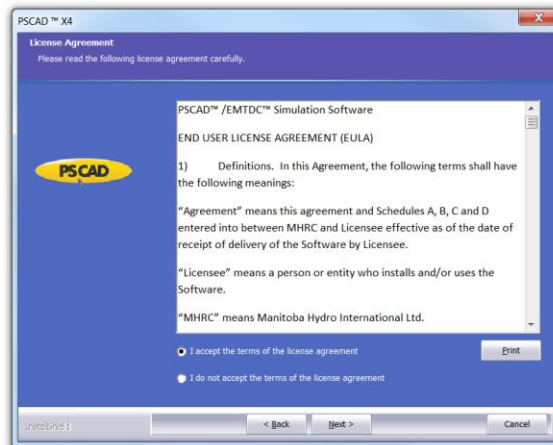
- d. If prompted, select “Install” to install the required prerequisite software (Microsoft Visual C++ and Microsoft .NET Framework). This may take a few minutes.



- e. Select “Next” to continue.

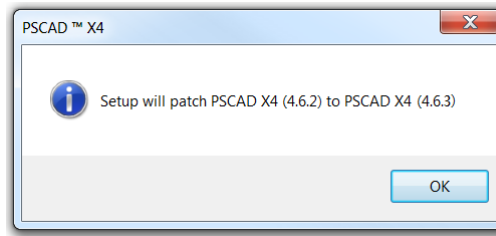


- f. Select “I accept the terms of the license agreement” if you agree with the terms, then select “Next”.

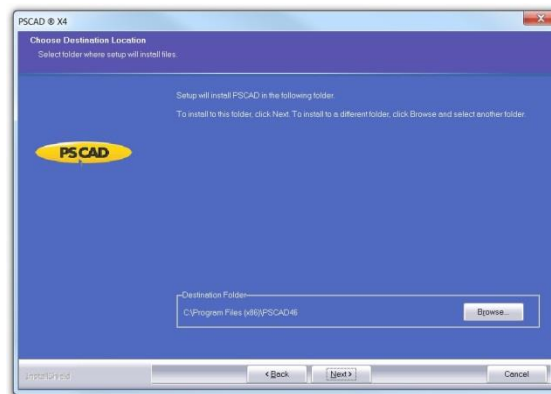




- g. If this is an update (patch), a message similar to the following will display. The installed (earlier) version will be updated to the later version. Select “OK”.



- h. If prompted, review the default destination folder for the program files. To install to a different folder, set the file path with the “Browse” button. Select “Next”.

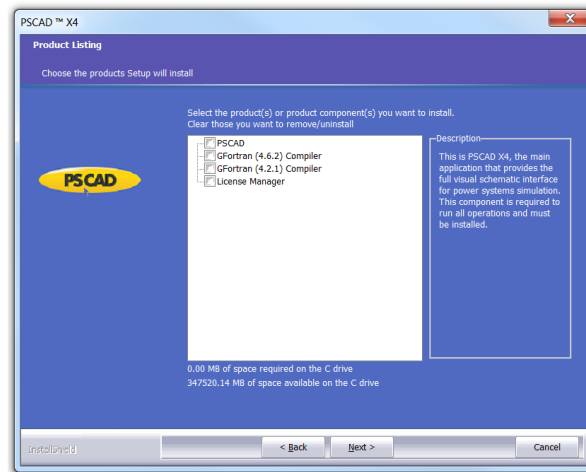


The default directories are as follows:

- **PSCAD v4.5:** C:\Program Files (x86)\PSCAD45\
- **PSCAD v4.6:** C:\Program Files (x86)\PSCAD46\



- i. Place a checkmark beside all programs to be installed, then select “Next” (see Section 2.2 to determine which products to select).

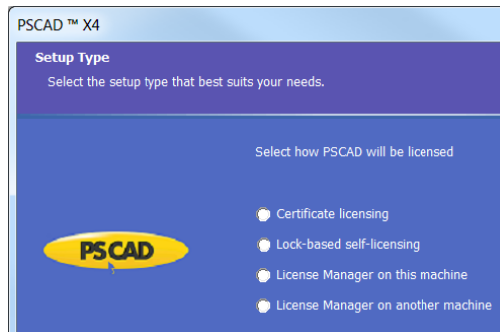


Notes

1. To select a product for installation, left-click on the checkbox to place a checkmark.
2. You may install or remove a product at a later time, in accordance with Section 2.8.

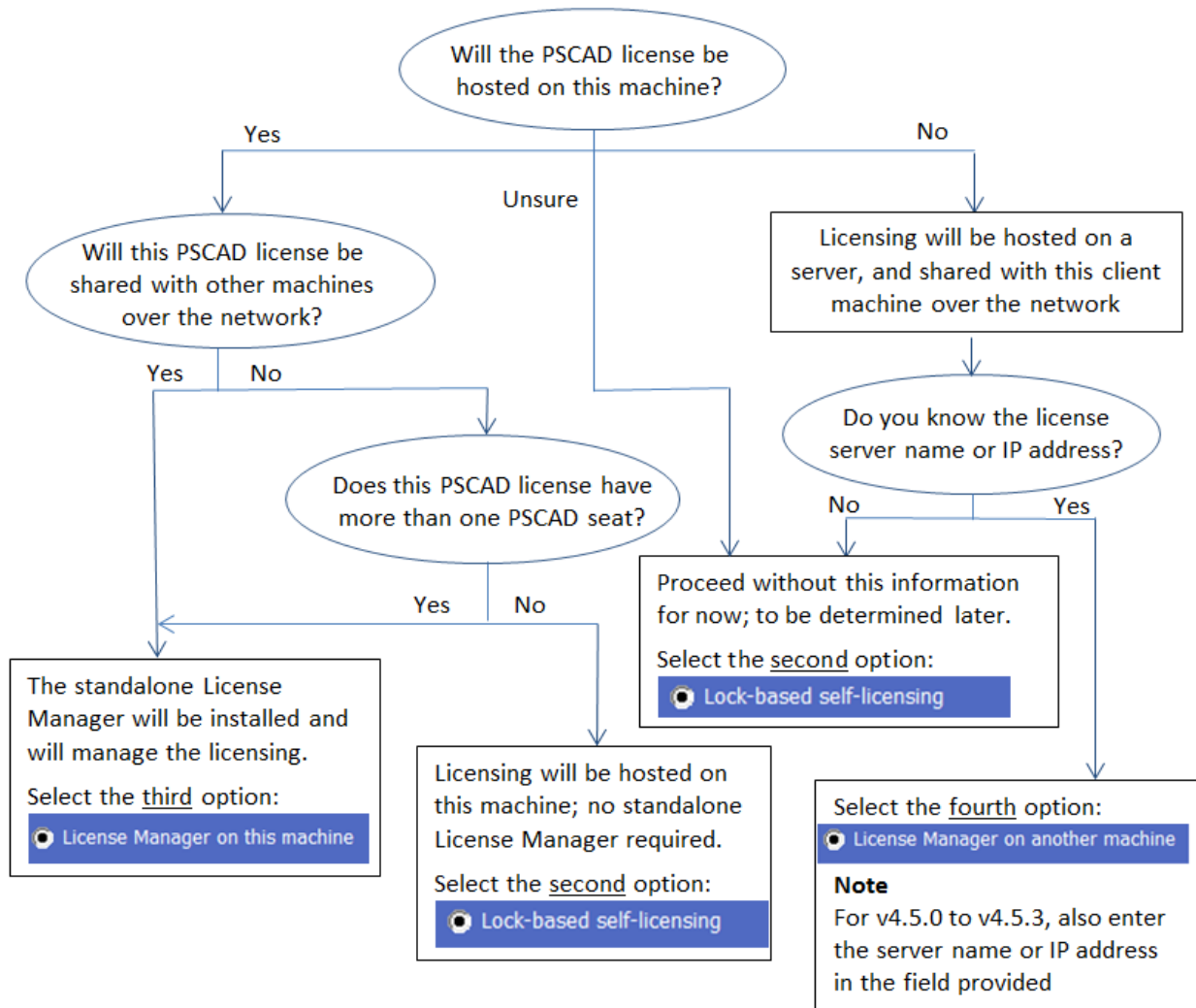


- j. Indicate how PSCAD will be licensed, then select “Next”. Review the flow chart below to determine the correct selection.

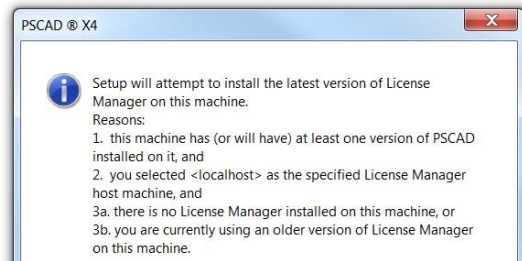


Notes

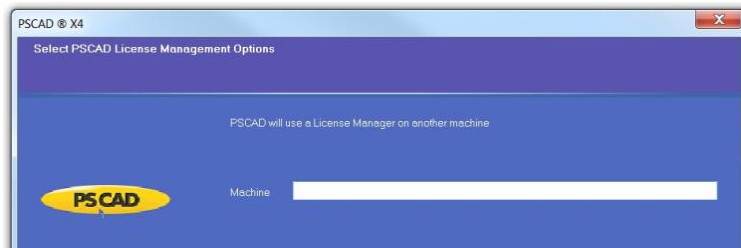
- 1. Do not select “Certificate Licensing”; this is never used for lock-based licensing.
- 2. See Section 3.3.2 for automating licensing configuration for a network license.



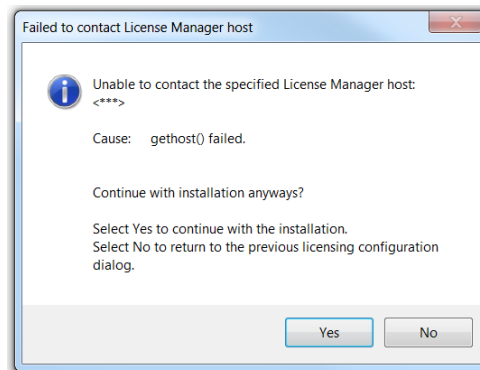
- k. If the following message displays, the License Manager software is expected to be installed on this machine, as per your selection in the previous step. Select “OK” to install the License Manager.



- l. For v4.5.4 and later: If you selected “License Manager on another machine” at Step (j), proceed as follows:
- Enter the server name or IP address in the field provided, then select “Next”.



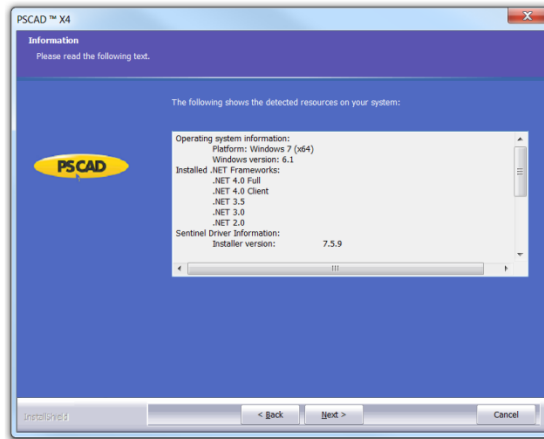
- If incorrect information is entered in the above dialog box, an error message similar to the following will display:



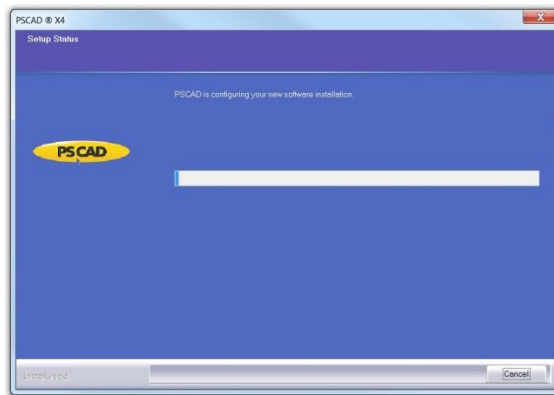
- To retry entering the License Manager host information, select “No”, then return to Step (j).
- To continue the installation without the License Manager host information, select “Yes”, and proceed to Step (m). You will be prompted for this information during license activation (Section 3.3).



- m. The “Information” screen will list your system resources. Select “Next”.



- n. The “Setup Status” screen will display, and PSCAD will be installed.

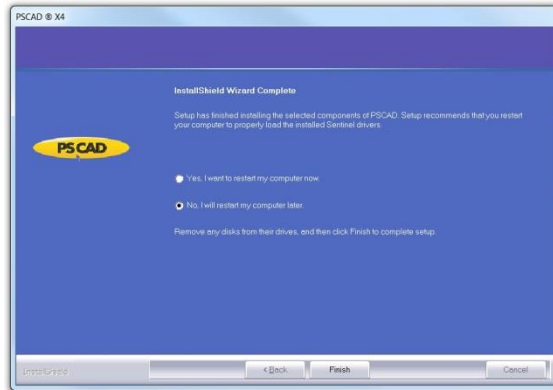


- o. If the License Manager was selected for installation, go to Section 2.5 for this installation, then return to Step (p) below.
- p. If GFortran was selected for installation, go to Section 2.6 for this installation, then return to Step (q) below.
- q. If prompted, unplug your Sentinel USB locks, then select “OK”. The InstallShield Wizard will install or repair your Sentinel drivers.

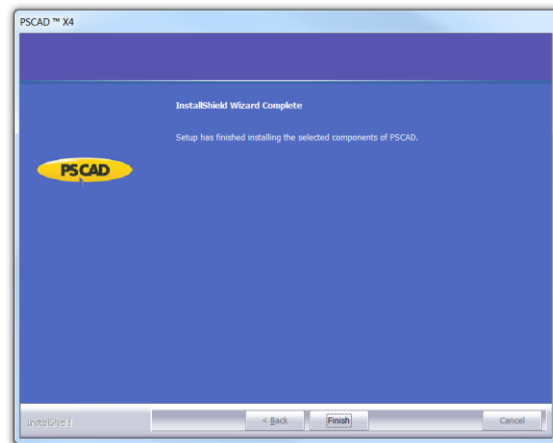




- r. If prompted, select whether to restart your computer, then press “Finish”.



- s. If prompted, select “Finish”.



- t. This concludes the procedure for installing the software. In order to use the software, the license must be activated; refer to Section 3 for instructions.



2.4 Installing PSCAD

PSCAD may be installed from the main PSCAD installation package, as per Section 2.3. There is no separate installation for PSCAD alone, as there are for the other software (e.g. GFortran, License Manager, Sentinel Drivers).

Note

If installing PSCAD on multiple computers, this software may instead be installed silently per Section 2.9.



2.5 Installing and Configuring the Standalone License Manager

This section contains instructions for installing and configuring the Standalone License Manager (refer to Section 1.2 for a description).

The License Manager should be installed and used for managing a license in one or both of the following situations:

- The license will be shared with client computers over the network, and or
- The license contains more than one PSCAD seat

Notes

1. Before proceeding, refer to Section 2.1 for requirements.
2. If you encounter any installation issues, refer to Section 4.1.

2.5.1 Installing the License Manager

Install the License Manager as follows:

- a. The License Manager installation may be initiated in one of the following manners:

Note

The installation files should be saved to and run from a local drive rather than from a network drive.

- (i) Follow instructions in Section 2.3 to use the PSCAD installation package, ensuring to select the License Manager at Step (i); or

Note

This setup will allow the other software to be selected for installation (e.g PSCAD and GFortran).

- (ii) Obtain a download from our support desk (support@pscad.com), unzip the files into some temporary local folder, right-click on "setup.exe" and select "Run as administrator" if operating on Windows Vista or later (or select "setup.exe" if operating on Windows XP). The License Manager installation will launch; or

Note

This setup will not allow PSCAD and GFortran to also be selected for installation.

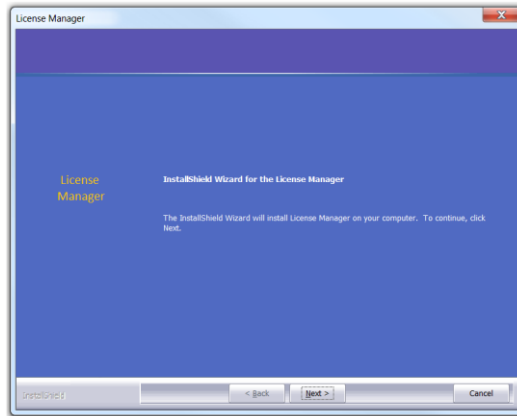
- (iii) From the PSCAD installation package, display the "License" folder, right-click on "setup.exe" and select "Run as administrator" if operating on Windows Vista or later (or select "setup.exe" if operating on Windows XP). The License Manager installation will launch.

Note

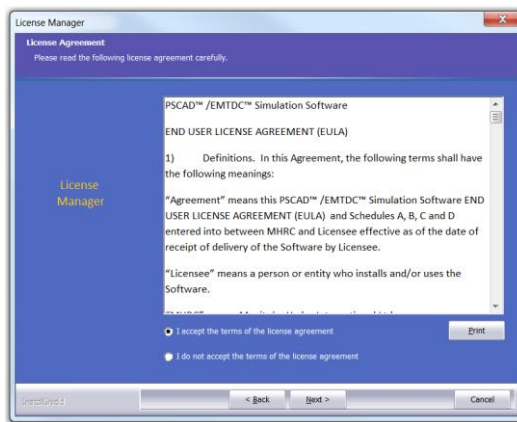
This setup will not allow PSCAD and GFortran to also be selected for installation.



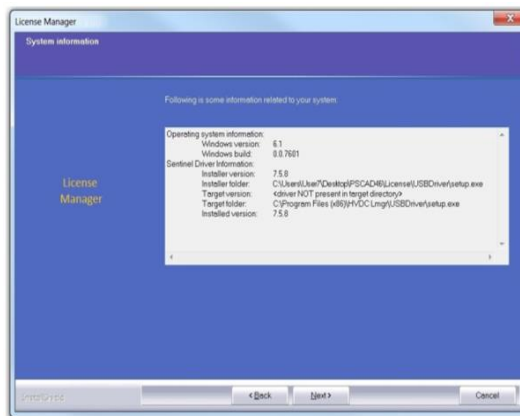
b. Select “Next”.



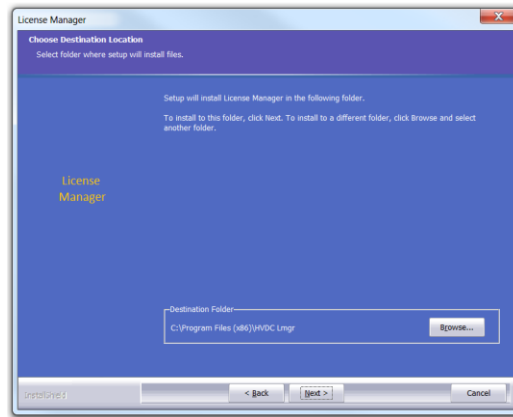
c. If you agree with the software license agreement, select “I accept the terms of the license agreement”, then “Next”.



d. If the “System Information” screen displays, select “Next”.

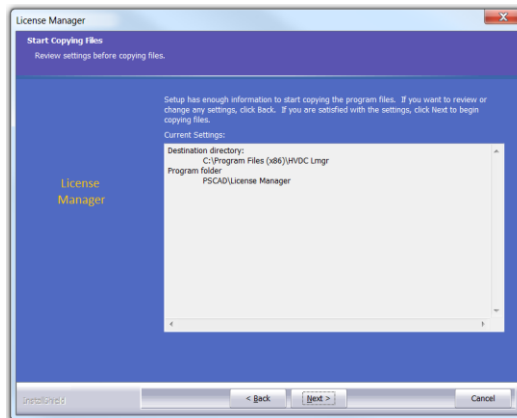


- e. Review the default destination folder for the License Manager program files. To install to a different folder, set the file path with the “Browse” button. Select “Next”.

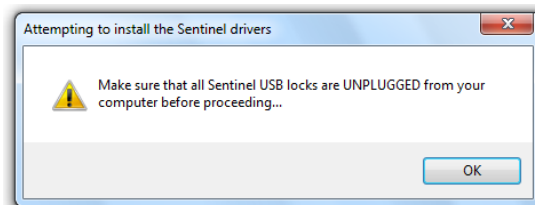


The default directory is as follows: C:\Program Files (x86)\HVDC Lmgr\

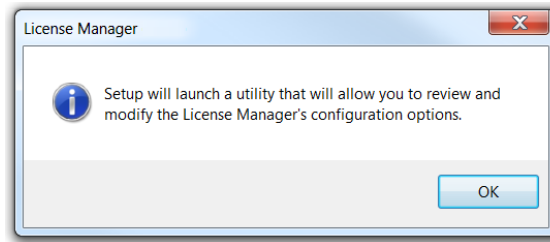
- f. Select “Next”. The License Manager will be installed, and started as a service when complete.



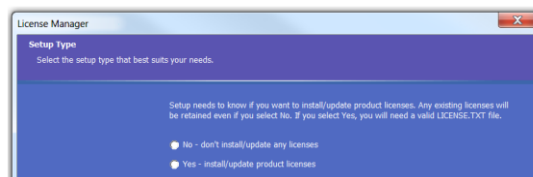
- g. If prompted, unplug all Sentinel USB locks from your computer, then select “OK”. Sentinel drivers are required for reading the USB lock, and will be installed. You will be prompted to plug your lock back in following the installation.



- h. The License Manager “Setup Tool” utility will display next. Proceed to Section 2.5.2 to configure the License Manager using this utility, then return to step (i) below.



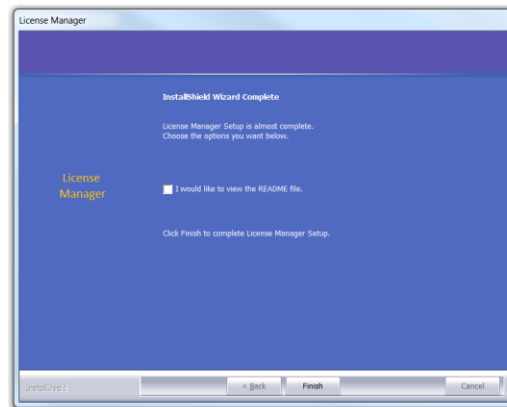
- i. Select whether to install the license as follows:



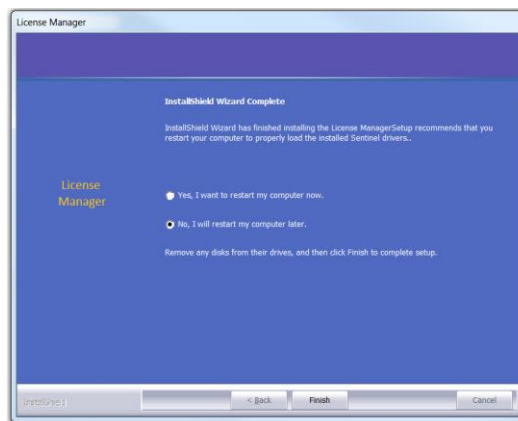
- If the license has not yet been installed on this computer, and if you have the associated “License.txt” file, select “Yes...”, perform the installation as per Section 3.1.1, then return to Step (j) below; or
- If you are updating your license to run PSCAD X4 (from PSCAD V4), and if you have the update files, select “Yes...”, perform the update as per Section 3.5, then return to Step (j) below; or
- If the license is already installed on this computer, and the license is not being updated to run PSCAD X4 (from PSCAD V4), select “No...”, and proceed to Step (j) below.



- j. Select "Finish".



- k. The following screen will indicate that the License Manager has been installed and configured, and recommend that you restart your computer. Select "Finish".





2.5.2 Configuring the License Manager

The License Manager “Setup Tool” is used to configure the networking between the license host and the client machine/s. This tool will display automatically as part of the License Manager installation.

Requirements

1. Windows administrative privileges if operating on Windows Vista or later
2. Requirements for the License Manager are listed in Section 2.1.2.
3. License Manager is installed.

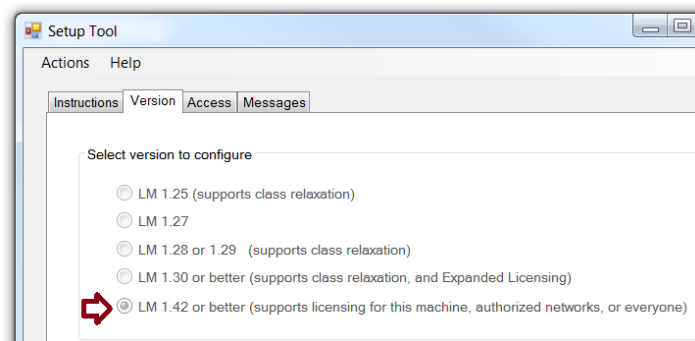
Notes

1. If you encounter any issues, refer to Section 4.2.
2. When configuring the Setup Tool, further references may be viewed in the tool’s “Help” menu.

The License Manager may be configured as follows:

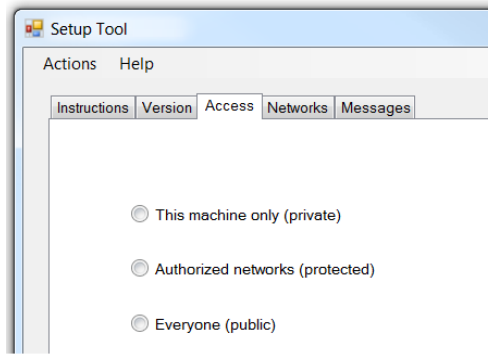
Notes

1. For more information on network licensing, refer to Appendix A.
2. These instructions are applicable to License Manager v1.42 and later.
 - a. Display the “Setup Tool” using one of the following methods:
 - If this is a continuation from Section 2.3 or 2.5.1, the Setup Tool will automatically display; or
 - Launch the “Setup Tool” from the Windows Start menu.
 - If you do not have the latest tool (v1.44), it may be downloaded from [here](#).
 - b. The “Version” tab will display the applicable License Manager version. Ensure “LM 1.42 or better” is selected.





c. Select the licensing on the “Access” tab according to the table below.



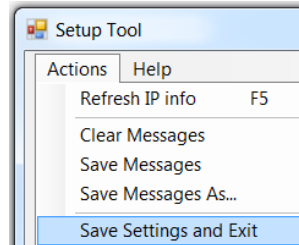
Will the license be shared over the network?	Do you need to restrict access to the license?	Make the following selection in the Setup Tool
No	n/a	<input checked="" type="radio"/> This machine only (private) ^[1]
Yes	Yes	<input checked="" type="radio"/> Authorized networks (protected) ^[2]
	No	<input checked="" type="radio"/> Everyone (public) ^[3]

1. The setting “This machine only (private)” only permits licensing locally on the machine that is hosting the license, and does not allow the sharing of the license with other computers over the network. The License Manager should only be installed if there are multiple seats on this license, and/or if using PSCAD v4.2.1.
2. The setting “Authorized networks (protected)” allows sharing of the license only across specified networks. This is selected when the license will be shared over the network and when it is necessary to restrict access to the license.
3. The setting “Everyone (public)” allows sharing of the license with any computer located on any network able to reach the server. This is selected when the license will be shared over the network, and when it is not necessary to restrict access to the license.

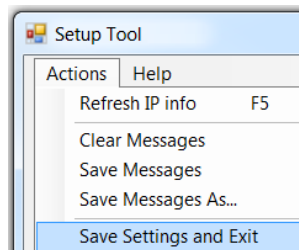


d. Proceed as follows:

- If you selected “This machine only” in Step (c) above, no further configuration is required. Simply save your settings and close the utility. Licensing will not be shared with other machines over the network.

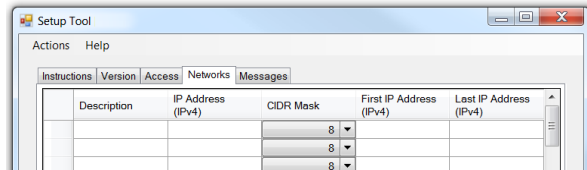


- If you selected “Everyone (public)” in Step (c) above, no further configuration is required. Simply save your settings and close the utility. Licensing will be shared with any computer over any network.



- If you selected “Authorized networks (protected)” in Step (c) above, then configure the “Networks” tab as per Step (e) below.

- e. If you selected “Authorized networks (protected)” in Step (c) above, configure the “Networks” tab (shown below) to restrict licensing across specified networks as follows:



Note

See Appendix A for more information on networks.

- For each separate network, populate the “Description”, “IP Address” and “CIDR Mask” fields.

Example: To limit licensing to PSCAD client machines on networks 10.100.10.* and 125.10.10.* in Building A, the “Networks” tab could be configured as shown:

Description	IP Address (IPv4)	CIDR Mask	First IP Address (IPv4)	Last IP Address (IPv4)
Clients 1 in Bldg A	10.100.10.1	24	10.100.10.0	10.100.10.255
Clients 2 in Bldg A	125.10.10.1	24	125.10.10.0	125.10.10.255

Note

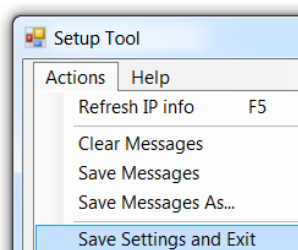
You may enter any information in the “Description” field, as this field is not monitored by the utility.

- Once the above selections are entered, the associated IP address ranges will be filled automatically.

For the above example, these fields have been populated as shown below:

Description	IP Address (IPv4)	CIDR Mask	First IP Address (IPv4)	Last IP Address (IPv4)
Clients 1 in Bldg A	10.100.10.1	24	10.100.10.0	10.100.10.255
Clients 2 in Bldg A	125.10.10.1	24	125.10.10.0	125.10.10.255

- Save your settings and close the utility:





2.6 Installing GFortran

This section contains instructions for installing the GFortran compiler (refer to Section 1.2 for a description). A FORTRAN compiler is required for running PSCAD cases; therefore, the freeware GFortran compiler comes bundled with the PSCAD installation package. Alternatively, a commercial compiler (e.g. Intel® Visual Fortran Compiler) may be used instead.

Two versions of GFortran are made available, depending on your version of PSCAD:

- **GFortran v4.2.1:** This version is compatible with PSCAD v4.5 and v4.6.
- **GFortran v4.6.2:** This version is compatible with PSCAD v4.6.

Requirement

Windows administrative privileges if operating on Windows Vista or later

Notes

1. If GFortran will be installed on multiple computers, this software may instead be installed silently as per Section 2.9 (supported with the PSCAD v4.5.4 and later installation package).
2. If you encounter any installation issues, refer to Section 4.1.
3. If a project will call any precompiled files (.obj, .o, or .lib files), the project must use a compatible compiler. Specifically, the following combinations will run:
 - GFortran 4.2.1 → may run files precompiled with GFortran 4.2.1
 - GFortran 4.6.2 → may run files precompiled with GFortran 4.6.2
 - Intel® Fortran (any version 9 through 16) → may typically run files precompiled with that specific version of Intel Fortran or earlier
 - Compaq Visual Fortran 6 → may run files precompiled with Compaq Visual Fortran 6 (supported with PSCAD v4.5 and earlier)



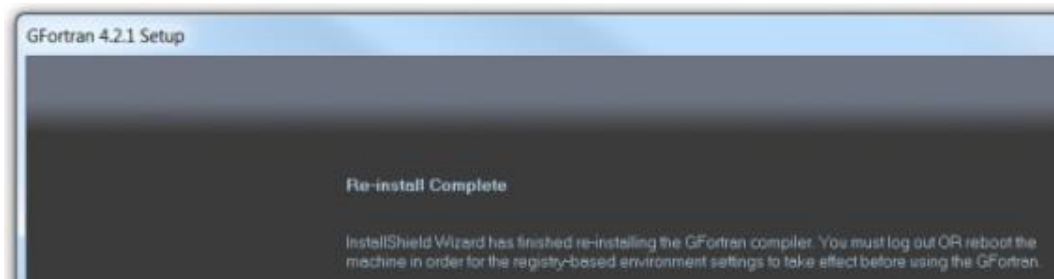
Install GFortran as follows:

- a. The GFortran installation may be initiated in one of the following manners:
 - GFortran may be selected in Section 2.3 Step (i), when running the PSCAD installation package; or
 - Obtain a download from our support desk (support@pscad.com), unzip the downloaded files into some temporary local folder, right-click on “setup.exe” and select “Run as administrator” if operating on Windows Vista or later (or select “setup.exe” if operating on Windows XP). The GFortran installation will launch; or
 - From the PSCAD installation package, browse to the “GFortran42” or “GFortran46” folder, right-click on “setup.exe” and select “Run as administrator” if operating on Windows Vista or later (or select “setup.exe” if operating on Windows XP). The GFortran installation will launch.

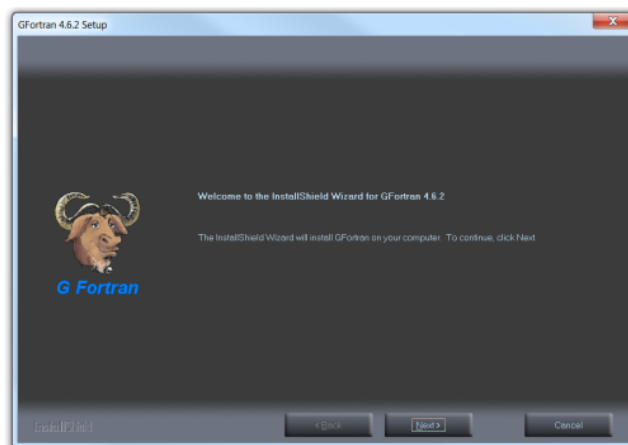
Note

The installation files should be saved to and run from a local drive rather than from a network drive.

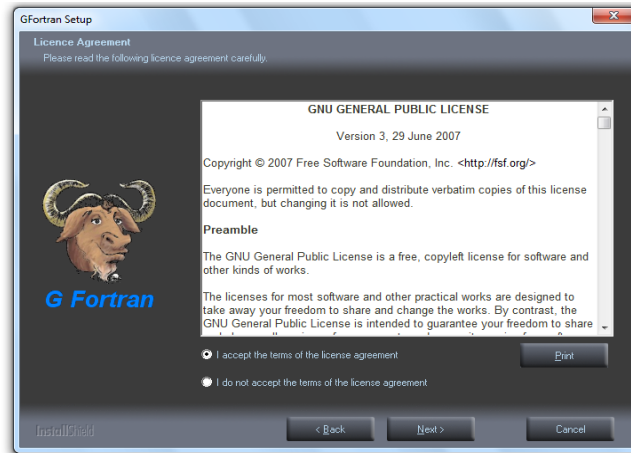
- b. If GFortran is already installed, the following dialog box will display. Select the “Finish” button. This completes the installation of GFortran.



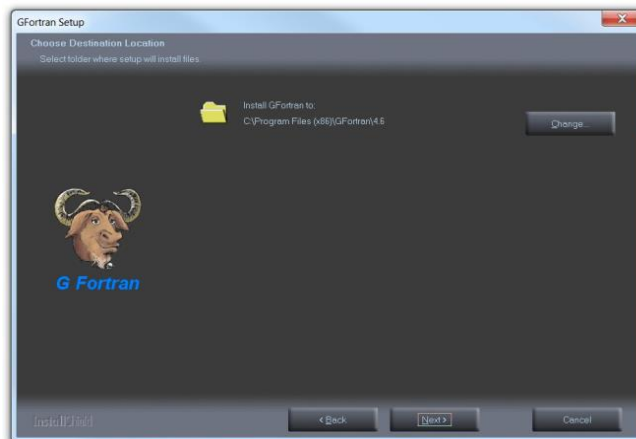
- c. If GFortran is not already installed, proceed as follows.
- d. If prompted, select “Next”.



- e. If you agree with the software license agreement, select “I accept the terms of the license agreement” and “Next”.



Review the default destination folder for the software files, then select “Next”.



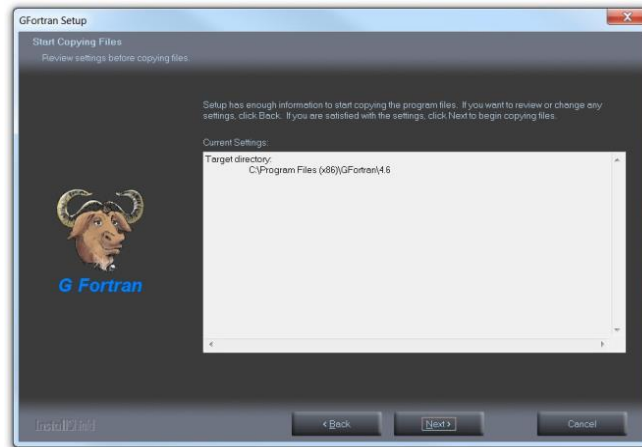
The default directories are as follows:

- **GFortran v4.2.1:** C:\Program Files (x86)\GFortran\4.2.1\
- **GFortran v4.6.2:** C:\Program Files (x86)\GFortran\4.6\

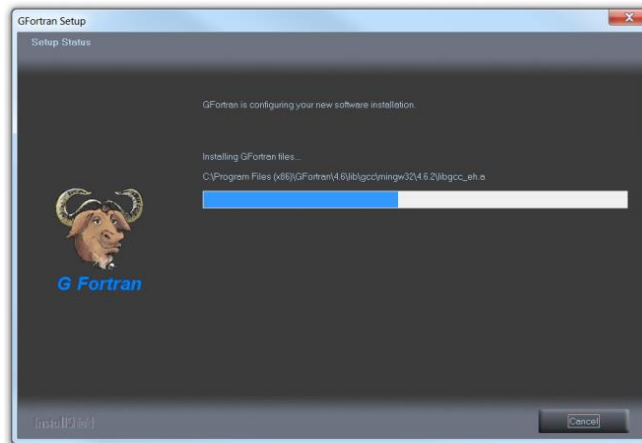
Note

To install to a different folder, use the “Change” button to set the file path.

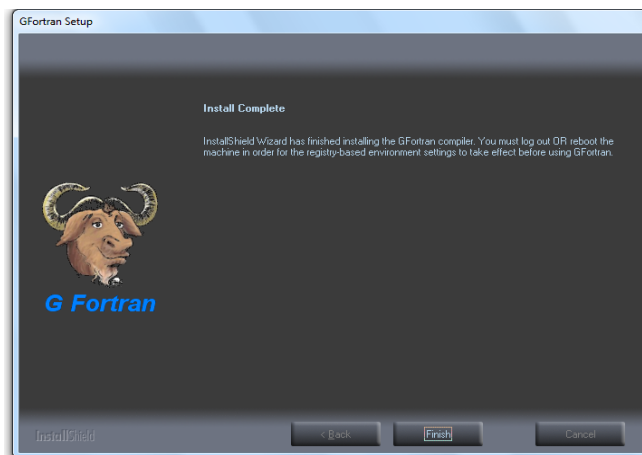
- f. Review the instructions in the “Start Copying Files” screen, then select “Next”.



- g. GFortran Setup will configure your software installation.



- h. When the installation is complete, select “Finish”.



Warning

Ensure to log out and log in to Windows (or restart your computer) following this installation, prior to running a PSCAD case with GFortran. This is required to apply the changes to your computer.



2.7 Installing Sentinel Drivers

This section provides instructions for installing Sentinel Drivers. Sentinel Drivers are required for detecting the PSCAD USB lock that is used to license the software (refer to Section 1.3 for more information).

There are several methods for installing the Sentinel Drivers, according for installation method:

- Alongside the installation of PSCAD products (see Section 2.7.1)
- As a separate installation using the InstallShield Wizard (see Section 2.7.2)
- As a separate installation without using the InstallShield Wizard (i.e. silent installation) (see Section 2.7.3)

Note

If this installation will be performed on a Windows 10 machine, Sentinel Drivers 7.5.9 (or better) are required (see Section 2.7.2 Step (2)).

2.7.1 Alongside PSCAD Products

The Sentinel Drivers will be installed automatically when either PSCAD or the License Manager is installed (Section 2.3 or 2.5).



2.7.2 Separate Installation – InstallShield Wizard

There are three manners in which the Sentinel Drivers may be installed separately from PSCAD products using the InstallShield Wizard.

1. From the PSCAD installation package:
 - a. If the installation files were downloaded, ensure they are saved to a local directory (e.g. new folder on your desktop).
 - b. Open the “USBDriver” folder.
 - c. Right-click on "Setup.exe", and select "Run as administrator" if operating on Windows Vista or later (or select “Setup.exe” if operating on Windows XP).
 - d. The Install Shield Wizard will display, and you will be prompted through the installation.
2. From a separate download:
 - a. Download the installation files from this [link](#).
 - b. Unzip and save all downloaded files to a local directory (e.g. new folder on your desktop).
 - c. Right-click on "Setup.exe", and select "Run as administrator" if operating on Windows Vista or later (or select “Setup.exe” if operating on Windows XP).
 - d. The InstallShield Wizard will display, and you will be prompted through the installation.
3. From the PSCAD installed program files:

Note

PSCAD must be installed for this procedure.

- a. Open a Windows file browser, and go to the program files folder, similar to the following path:

C:\Program Files (x86)\PSCAD4x\USBDriver\
- b. Right-click on "Setup.exe", and select "Run as administrator" if operating on Windows Vista or later (or select “Setup.exe” if operating on Windows XP).
- c. The Install Shield Wizard will display, and you will be prompted through the installation.



2.7.3 Separate Installation – Silent

There are two manners in which the Sentinel Drivers may be silently installed separately from PSCAD products.

1. From the PSCAD installation package:

- a. If the installation files were downloaded, ensure they are saved to a local directory (e.g. new folder on your desktop).
- b. Browse to the "USBDriver" folder.
- c. Right-click on "Install.bat", and select "Run as administrator" if operating on Windows Vista or later (or select "Setup.exe" if operating on Windows XP).
- d. The installation will be performed silently.

2. From the PSCAD installed program files:

Note

PSCAD must be installed for this procedure.

- a. Open a Windows file browser, and go to the program files folder, similar to the following path:

C:\Program Files (x86)\PSCAD4x\USBDriver\

- b. Right-click on "Install.bat", and select "Run as administrator" if operating on Windows Vista or later (or select "Setup.exe" if operating on Windows XP).
- c. The installation will be performed silently.



2.8 Adding or Removing Software

This section provides instructions for adding or removing the following installed software:

- PSCAD
- GFortran
- License Manager
- Sentinel Drivers
- Microsoft Visual C++
- Microsoft .NET Framework

There are two methods for adding or removing the software:

- Section 2.8.1 provides instructions for using the PSCAD installation package.
- Section 2.8.2 provides instructions for using the Windows Control Panel.



2.8.1 PSCAD Installation Package

The following software may be added or removed using the PSCAD installation package:

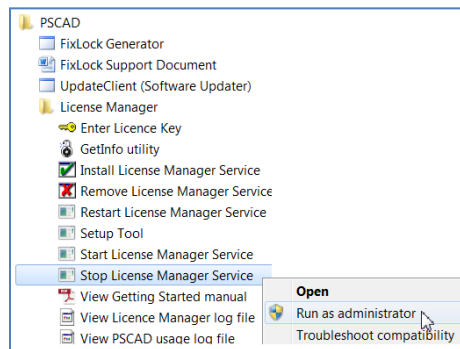
- PSCAD
- GFortran
- License Manager

Requirement

Windows administrative privileges if operating on Windows Vista or later

Proceed as follows:

- Exit all instances of PSCAD as applicable.
- Stop the License Manager if applicable (from the Windows “Start” menu, right-click “Stop License Manager Service”, then select “Run as administrator” if operating on Windows Vista or later, or select “Stop License Manager Service” if operating on Windows XP).



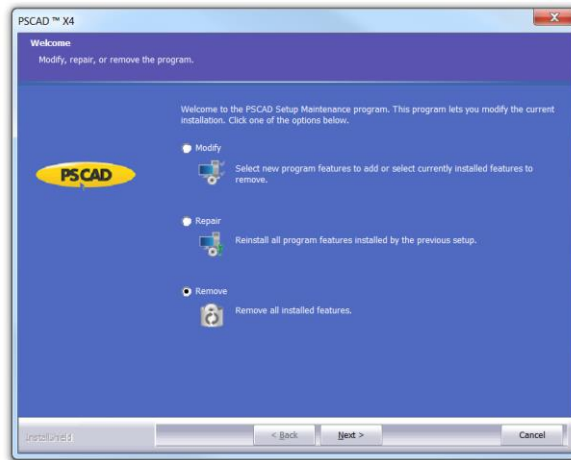
- To add or remove PSCAD or the License Manager, browse to the PSCAD installation files, right-click on “setup.exe”, and select “Run as administrator” if operating on Windows Vista or later (or select “setup.exe” if operating on Windows XP), or
- To add or remove GFortran, browse to the “GFortran42” or “GFortran46” installation files, right-click on “setup.exe”, and select “Run as administrator”.

Note

The installation files should be saved to and run from a local drive rather than from a network drive.

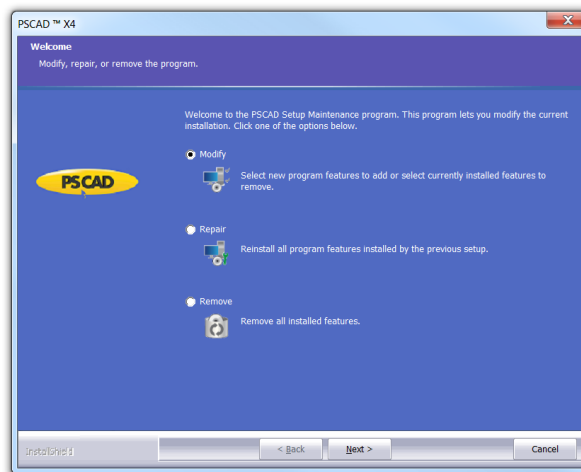


- e. To remove software, select “Remove” and “Next”. This software will be removed, or



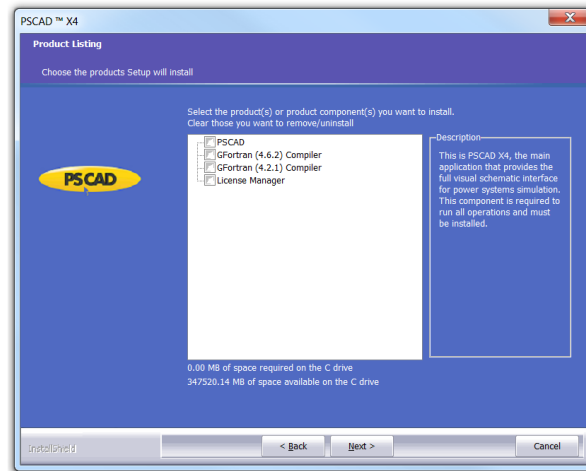
- f. To add software:

- Select “Modify” and “Next”:





- Place a checkmark beside all software to be retained or added, and select “Next”:



Warning

Ensure that all software to be retained is selected. All software that is de-selected will be uninstalled.

- g. Log out then log in to your computer to apply the changes.



2.8.2 Windows Control Panel

The following software may be removed using the Windows Control Panel:

- PSCAD
- GFortran
- License Manager
- Sentinel Drivers
- Microsoft Visual C++
- Microsoft .NET Framework

Requirement

Windows administrative privileges if operating on Windows Vista or later

Proceed as follows:

- a. Display the Windows Programs and Features dialog box (from the Windows Start menu, go Control Panel | Programs and Features).
- b. From the displayed software listing, right-click on the program to be removed, select “Uninstall”, and proceed through the removal screens.
- c. Log out then log in to your computer to apply the changes.



2.9 Silent Installation (PSCAD or GFortran)

2.9.1 Background

In an unattended, or silent, installation, an installation is run in “record” mode, in which all responses are logged by the installer and saved in a response file. When the same installation is run on another computer in silent mode, with the response file present, the installation will run in total silence, with NO dialogs being displayed. This then allows an organization to use automation tools to deploy (install) a product on multiple computers without any manual user intervention.

This section provides instructions for performing silent installations for PSCAD or GFortran in three different manners:

- When the installation files are being run from a writeable media (Section 2.9.4)
- When the installation files are being run from a read-only media (Section 2.9.5)
- Customized (Section 2.9.6)

Review Sections 2.9.2 and 2.9.3 before proceeding for supported products and requirements.

2.9.2 Supported Products

Unattended (silent installations) are supported for the following products:

- PSCAD v4.5.4 and later
- GFortran v4.2.1 and v4.6.2

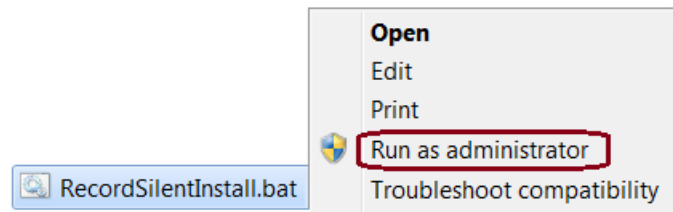
Note

If GFortran will be installed, ensure to log out and log in to your computer following this installation, prior to running a PSCAD case with GFortran. This is required to apply the changes to your computer.

2.9.3 Windows Administrative Privileges Requirement

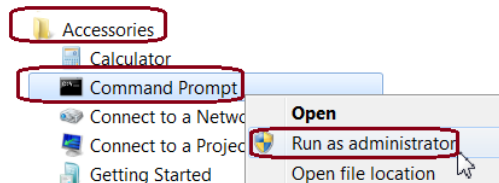
Windows administrative privileges are required for running the silent installation if operating on Windows Vista or later. There are three methods for performing this:

1. Obtain administrator credentials:
 - a. Log in on the computer with Windows administrative credentials.
2. Run the batch file with Windows administrative privileges:
 - a. Run the specified file with Windows administrative privileges. This may be done by right-clicking on the file, and selecting “Run as administrator” if operating on Windows Vista or later (or selecting the file if operating on Windows XP). You will be prompted to enter Windows administrative privileges login credentials.

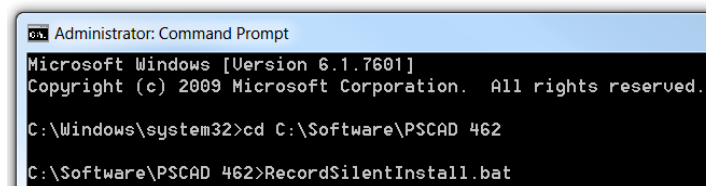


3. Log in to the Command Prompt with Windows Administrative Privileges:

- a. Browse to the command prompt from the Windows Start menu, and run it with Windows administrative privileges:



- b. Change the directory (i.e. cd) to the folder containing your installation files, then run the required batch file. See the following screenshot for an example:





2.9.4 Unattended Installation when Installing from Writeable Media

This method may be used when installing from shared folders or writeable USB devices.

Note

Windows administrative privileges are required if operating on Windows Vista or later; refer to Section 2.9.3 for instructions.

Note

This process does not permit PSCAD, GFortran 4.2, and GFortran 4.6 to be installed together. To silently install all of this software, separate silent installations must be performed.

Generate the response file on the first computer as follows:

- a. Ensure that the product is not already installed; otherwise the generated response file will be incorrect.
- b. Browse to the product's installation folder on the media.
- c. Run the "RecordSilentInstall.bat" command batch file.

Notes

1. For PSCAD, this file is in the main view of the installation folder.
 2. For GFortran 4.2, this file is in the "GFortran42" folder.
 3. For GFortran 4.6, this file is in the "GFortran46" folder.
- d. The installer will launch, and you may then configure the software installation appropriately.

Note

If installing PSCAD, ensure that all other software are de-selected when prompted (i.e. GFortran, License Manager).

- e. All of your responses will be recorded to a response file called setup.iss located in the same folder.
- f. Copy the entire installer folder, which now also contains the response file, to an accessible shared folder, or to a USB stick.

For all other computers:

- a. Open a Windows file browser and browse the installation folder on the shared folder or USB stick.
- b. Run the "RunSilentInstall.bat" file.
- c. The installation will proceed, and the batch file will exit when done.



2.9.5 Unattended Installations when using Read-only Media

This method may be used when installing from a CD-ROM or a write-protected USB device.

Notes

1. Windows administrative privileges are required if operating on Windows Vista or later; refer to Section 2.9.3 for instructions.
2. If possible, copy the installer files and folders to a shared folder or a writeable USB device, then follow the instructions in Section 2.9.4 (preferred method).
3. This process does not permit PSCAD, GFortran 4.2, and GFortran 4.6 to be installed together. To silently install all of this software, separate silent installations must be performed.

Generate the response file on the first computer as follows:

- a. Ensure that the product is not already installed; otherwise the generated response file will be incorrect.
- b. Insert the media, and browse to the product's installation folder on the media.
- c. Run the "RecordSilentInstallToTempFolder.bat" command batch file.

Notes

1. For PSCAD, this file is in the main view of the installation folder.
2. For GFortran 4.2, this file is in the "GFortran42" folder.
3. For GFortran 4.6, this file is in the "GFortran46" folder.

- d. The installer will launch, and you may then configure the software installation.

Note

If installing PSCAD, ensure that all other software are de-selected when prompted (i.e. GFortran, License Manager).

- e. All of your responses will be recorded to a response file called "<product>_Install.iss".
- f. When the installation is complete, it will tell you where the response file is located.
- g. Copy the response file to an accessible shared folder, or to a USB stick.

For all other computers:

- a. Insert the media.
- b. Open a command prompt and browse to the product's folder on the media.
- c. Type in the following, and press "Enter":

RunSilentInstallUsingSpecifiedResponse.bat <absolute path to response file>.

- d. The installation will proceed, and the batch file will exit when done.



2.9.6 End-User Customized Unattended Installations

This method may be used when customizing a silent installation.

Notes

1. Windows administrative privileges are required if operating on Windows Vista or later; refer to Section 2.9.3 for instructions.
2. This process does not permit PSCAD, GFortran 4.2, and GFortran 4.6 to be installed together. To silently install all of this software, separate silent installations must be performed.

Generate the response file on the first computer as follows:

- a. Ensure that the product is not already installed; otherwise the generated response file will be incorrect.
- b. Open a command prompt and browse to the product's installation folder on the media.

Notes

1. For PSCAD, this file is in the main view of the installation folder.
2. For GFortran 4.2, this file is in the "GFortran42" folder.
3. For GFortran 4.6, this file is in the "GFortran46" folder.

- c. Type in the following text, and press *Enter*:

```
Setup.exe /r /f1Absolute_Path_And_Name_Of_Response_File
```

- d. For example:

```
Setup.exe /r /f1"D:\Installer\setup.iss"
```

Note

If installing PSCAD, ensure that all other software are de-selected when prompted (i.e. GFortran, License Manager).

For all other computers:

- a. Ensure that the product is not already installed; otherwise the generated response file will be incorrect.
- b. Open a command prompt, and browse to the product's installation folder on the media.
- c. Type in the following, and press enter:

```
Setup.exe /s /f1Absolute_Path_And_Name_Of_Response_File
```

- d. For example:

```
Setup.exe /s /f1"D:\Installer\setup.iss"
```




3. Licensing

This section provides instructions related to your PSCAD license, including installation, removal, and replacement, as well as updating, sharing and moving the license.

3.1 Installing a License Database File

This section provides instructions for installing your license database file. The license database file is used in conjunction with a USB lock to authorize PSCAD licensing (see Section 1.3 for more information).

A license database file is installed in the following situations:

- A PSCAD license is being installed on a client machine, and will be used to license PSCAD on that machine, or
- A PSCAD license is being installed on a server machine, and will be used to share licensing with other machines over the network, or
- An existing PSCAD license is being replaced with one with better products. For example, an additional PSCAD seat may be added to an existing license.

A license database file may be installed using one of two methods. The first method (preferred) uses a standalone utility, "License Update Utility", and is applicable to v4.5 and v4.6 (see Section 3.1.1). The second method uses the PSCAD application, and is applicable only to v4.5.3 and earlier (see Section 3.1.2).

3.1.1 Using the License Update Utility

The License Update Utility is standalone software that may be used to install the license database file. This is the preferred method for installing the license.

Requirements

1. Windows administrative privileges if operating on Windows Vista or later
2. The "License.txt" file corresponding to the license
3. See also the licensing requirements listed in Section 2.1.

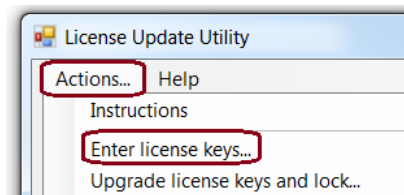
Note

If you encounter any licensing issues, please contact our support desk as per Section 4.3, ensuring to attach all requested files to your email.

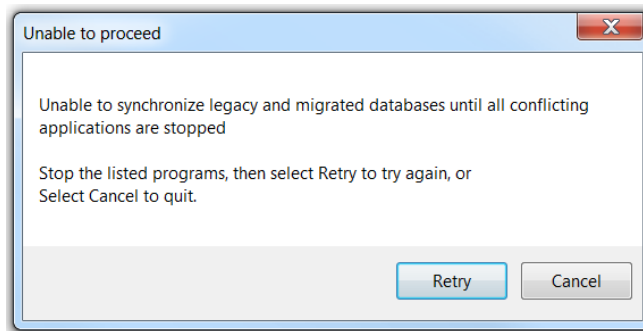


Proceed as follows:

- a. Save the License.txt file corresponding to your PSCAD license to the computer.
- b. Ensure that the USB lock is plugged in.
- c. If applicable, close all instances of PSCAD.
- d. If applicable, stop the License Manager service (from the Windows Start menu, browse to and right-click on “Stop License Manager Service”, then select “Run as administrator” if operating on Windows Vista or later, or select “Stop License Manager Service” if operating on Windows XP).
- e. Download the latest version of the utility from this [link](#), extract the files to a local folder, and run the “LicenseUpdate.exe” file.
- f. Select “Enter license keys” from the “Actions” menu.

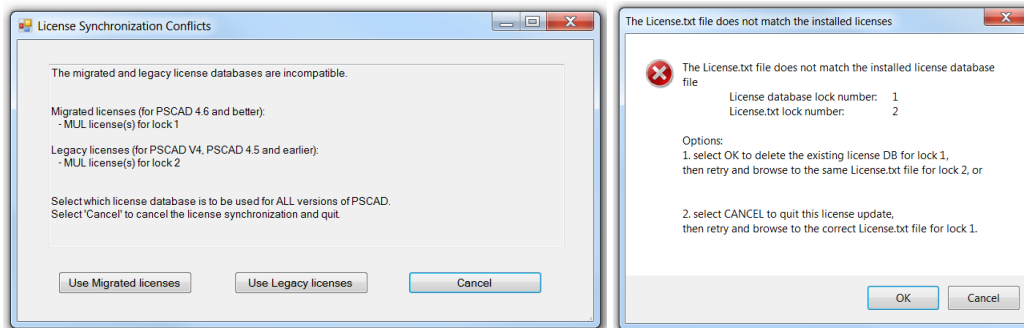


- g. If a message similar to the following one displays, the utility has detected that PSCAD is running. PSCAD must be closed before licensing may resume. Close all instances of PSCAD, then select “Retry”.



- h. When prompted, browse to and select the “License.txt” file that was saved to your computer in Step (a), then select “Open”.

- i. If either of the following errors displays, the utility has detected a conflict between the selected License.txt file and an already-installed license database file. Simply select “Cancel”, delete both license database files as per Section 3.2, then resume from Step (f) above.



- j. Once the license is installed, the utility will list the details of the installed license. Close the utility.
- k. If applicable, start the License Manager (from the Windows Start menu, browse to and right-click on “Start License Manager Service”, then select “Run as administrator” if operating on Windows Vista or later, or select “Start License Manager Service” if operating on Windows XP).
- l. Activate the license to run PSCAD as per Section 3.3.



3.1.2 Using the PSCAD Application

The PSCAD application may be used to install the license database file.

Requirements

1. Windows administrative privileges if operating on Windows Vista or later
2. The "License.txt" file corresponding to the license
3. PSCAD is installed (Section 2.3)
4. See also the licensing requirements listed in Section 2.1.

Applicability

This instruction is applicable to PSCAD v4.5.3 and earlier. For later versions, follow instructions in Section 3.1.1.

Note

If you encounter any licensing issues, please contact our support desk as per Section 4.4. Ensure to attach the applicable license files to your request.

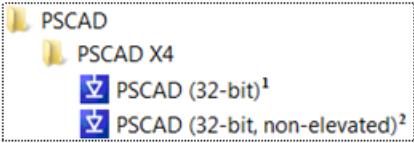
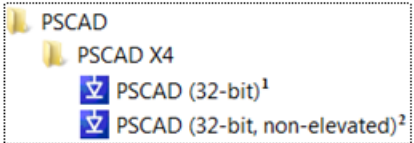
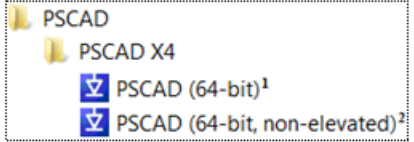
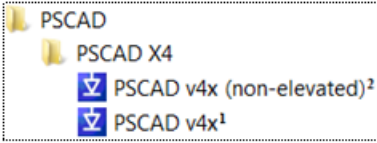
Proceed as follows:

- a. Save the License.txt file corresponding to the PSCAD license to a new folder on your desktop.
- b. Ensure that the USB lock is plugged in.
- c. If applicable, delete the current PSCAD license database file as per Section 3.2.



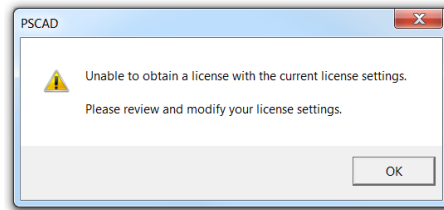
d. Launch PSCAD according to your Windows operating system, and your PSCAD version and edition:

- If operating on Windows XP / Vista/ 7 / 8 / 8.1 proceed as shown:

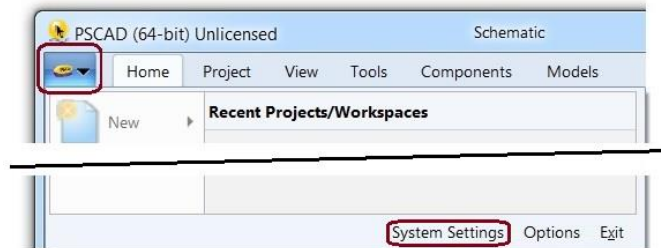
PSCAD Version	Educational Edition	Professional Edition
v4.5.0	<p><u>Windows 32-bit or 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p>  <p>Note The 64-bit version of PSCAD is not available for the Educational Edition at v4.5.0. It is however available as of v4.5.1 and later.</p>	<p><u>Windows 32-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p>  <p><u>Windows 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> 
v4.5.1 and later	<p><u>Windows 32-bit or 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p>  <p>Note The links will launch the PSCAD version corresponding to the computer's operating system (i.e. 32-bit or 64-bit), for both the Professional and Educational Editions.</p>	
<ol style="list-style-type: none"> 1. Select this option if you have Windows administrative privileges on your computer. 2. Select this link if you do not have Windows administrative privileges on your computer, and/or you are operating on Windows XP. <p>Note PSCAD v4.6 may not be run on Windows XP.</p>		

- Or, if operating on Windows 10, there is one shortcut in the Windows Start menu. In v4.6.1 and later, this shortcut launches the application without Windows administrative privileges. In v4.6.0 and earlier, this shortcut will try to launch the application with Windows administrative privileges. If you do not have these privileges, simply set the shortcut to run without these privileges (right-click on the shortcut, go Properties | Advanced, de-select the checkbox "Run as administrator", and select "Ok" and "Ok" again).

- e. The following dialog box will display if a license is not available. Select “OK”.



- f. If not already displayed, display the “System Settings” dialog box from the PSCAD Start button.

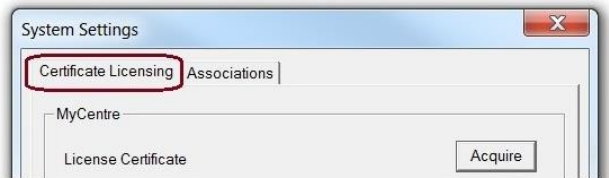


- g. Check whether PSCAD is properly configured:

Correct Licensing Configuration
(This is for "Legacy Licensing")



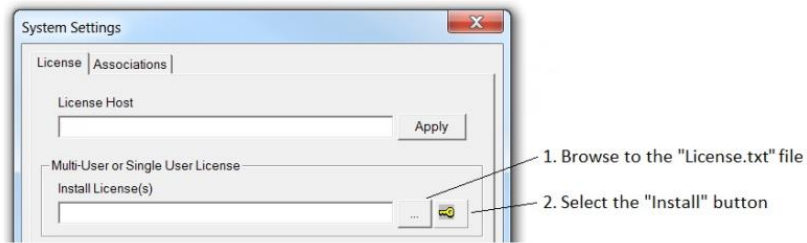
Incorrect Licensing Configuration
(This is for "Certificate Licensing")



- If the licensing tab correctly displays “License” (left view above), proceed to Step (h) below.
- Or, if the licensing tab incorrectly displays “Certificate Licensing” (right view above), switch the configuration to legacy licensing as per Section 3.9, then go to Step (h) below.

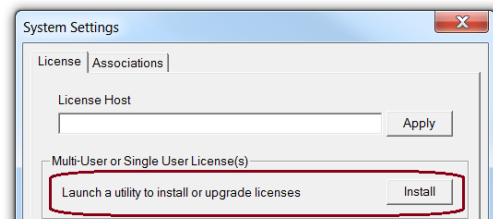


- h. Install the license as shown below.



Note

For version 4.5.4 and later, the “Install License(s)” field has been changed to launch the License Update Utility. Select “Install” and refer to Section 3.1.1 for further information.



- i. Once the license has been installed, it may be activated to run PSCAD as per Section 3.3.

3.2 Removing a License Database File

This section provides instructions for removing a license database file. This procedure is normally followed before installing a license (License 1) on a computer that is already hosting a different license (License 2).

Warning

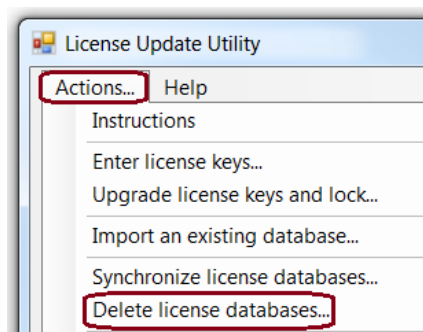
Consideration should be taken prior to deleting the existing license database file, as it might contain products other than PSCAD, for example Livewire or E-TRAN.

Requirement

The license is installed on the client or host machine as applicable (Section 3.1).

There are two methods for removing the license database file “Imgr-hvdc”, as follows:

- **License Update Utility:** This procedure is applicable when using License Update Utility v1.37 or later (released with License Manager v1.37), as follows:
 - If applicable, close all instances of PSCAD.
 - If applicable, stop the License Manager service (from the Windows Start menu, browse to and right-click on “Stop License Manager Service”, then select “Run as administrator” if operating on Windows Vista or later, or select “Stop License Manager Service” if operating on Windows XP).
 - Download the latest version of the utility from this [link](#), extract the files to a local folder, and run the “LicenseUpdate.exe” file.
 - Select “Delete license databases” from the “Actions” menu.



Note

If you are running License Update Utility v1.36 and earlier, use a Windows file browser for deleting your license database files (see the step below).

- **Windows File Browser:** Open a Windows file browser, and delete the PSCAD license database file “Imgr-hvdc” from the following two locations as applicable:
 - C:\Windows\
 - C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager\



3.3 Activating a License

Normally, licensing is configured and activated following the installation and launching of PSCAD, as per Section 3.3.1.

Or, to automatically configure licensing on multiple PSCAD client machines when using network licensing, please refer as follows:

- Specify the license host during the PSCAD installation (Section 3.3.2), or
- Specify the license host using a script (Section 3.3.3).



3.3.1 Activating a License using the PSCAD Application

Requirements

1. PSCAD is installed (Section 2.3).
2. The license is installed on the client or host machine (Section 3.1), and the USB lock is plugged in.

Notes

If you encounter any licensing issues, refer to Section 4.4.

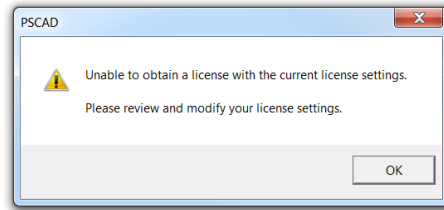
- a. Launch PSCAD according to your Windows operating system, and your PSCAD version and edition:
 - If operating on Windows XP / Vista/ 7 / 8 / 8.1 proceed as shown:

PSCAD Version	Educational Edition	Professional Edition
v4.5.0	<p><u>Windows 32-bit or 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> <div style="border: 1px dashed gray; padding: 5px;"> <p>PSCAD</p> <p> PSCAD X4</p> <p> PSCAD (32-bit)¹</p> <p> PSCAD (32-bit, non-elevated)²</p> </div> <p>Note The 64-bit version of PSCAD is not available for the Educational Edition at v4.5.0. It is however available as of v4.5.1 and later.</p>	<p><u>Windows 32-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> <div style="border: 1px dashed gray; padding: 5px;"> <p>PSCAD</p> <p> PSCAD X4</p> <p> PSCAD (32-bit)¹</p> <p> PSCAD (32-bit, non-elevated)²</p> </div>
	<p><u>Windows 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> <div style="border: 1px dashed gray; padding: 5px;"> <p>PSCAD</p> <p> PSCAD X4</p> <p> PSCAD (64-bit)¹</p> <p> PSCAD (64-bit, non-elevated)²</p> </div>	
v4.5.1 and later	<p><u>Windows 32-bit or 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> <div style="border: 1px dashed gray; padding: 5px;"> <p>PSCAD</p> <p> PSCAD X4</p> <p> PSCAD v4x (non-elevated)²</p> <p> PSCAD v4x¹</p> </div> <p>Note The links will launch the PSCAD version corresponding to the computer's operating system (i.e. 32-bit or 64-bit), for both the Professional and Educational Editions.</p>	
<ol style="list-style-type: none"> 1. Select this option if you have Windows administrative privileges on your computer. 2. Select this link if you do not have Windows administrative privileges on your computer, and/or you are operating on Windows XP. <p>Note PSCAD v4.6 may not be run on Windows XP.</p>		

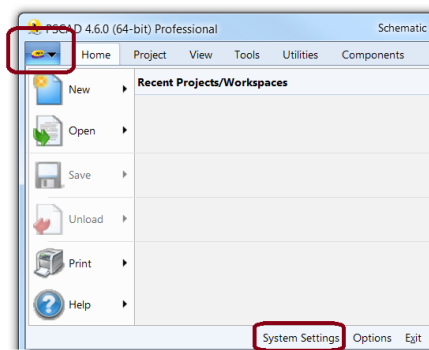
- Or, if operating on Windows 10, there is one shortcut in the Windows Start menu. In v4.6.1 and later, this shortcut launches the application without Windows administrative privileges. In v4.6.0 and earlier, this shortcut will try to launch the application with Windows administrative privileges. If you do not have these privileges, simply set the shortcut to run without these

privileges (right-click on the shortcut, go Properties | Advanced, de-select the checkbox “Run as administrator”, and select “OK” and “Ok” again).

- b. If a license is not available, the following dialog box will display. Select “OK”.



- c. If not automatically displayed, display the “System Settings” dialog box from the PSCAD start button.



- d. Check whether PSCAD is properly configured:

Correct Licensing Configuration
(This is for "Legacy Licensing")

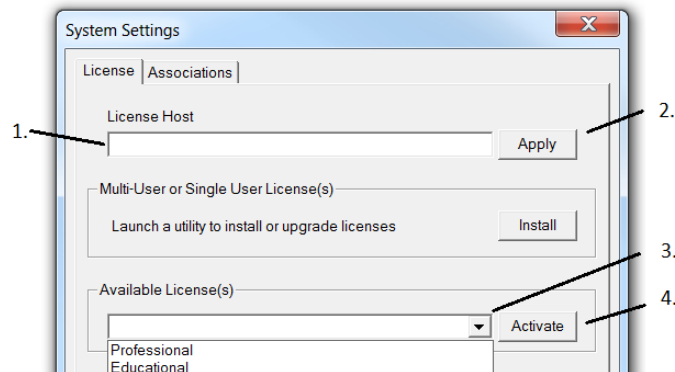


Incorrect Licensing Configuration
(This is for "Certificate Licensing")



- If the licensing tab correctly displays “License” (left view above), proceed to Step (e) below.
- Or, if the licensing tab incorrectly displays “Certificate Licensing” (right view above), switch the configuration to legacy licensing as per Section 3.9, then go to Step (e) below.

e. Activate a license as follows:



(1) Enter the following information:

- **If this machine is hosting the license:** Enter the following text in this field:

localhost 2053

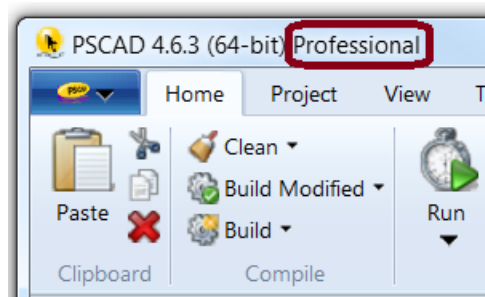
- **Or, if the license is being hosted on a server:** Enter the server name or IP address in this field, followed by a space, then 2053. For example: ServerABC 2053

(2) Select “Apply”.

(3) Select the edition from the drop-down menu (Professional or Educational).

(4) Select “Activate”.

f. If the license has successfully been activated, the edition (“Professional” or “Educational”) will be displayed in the application heading. Close out of the System Settings dialog box.



g. PSCAD will be licensed to use. When PSCAD is exited, the license will be returned.

Note

For new PSCAD users, a listing of resources is available in Appendix B.

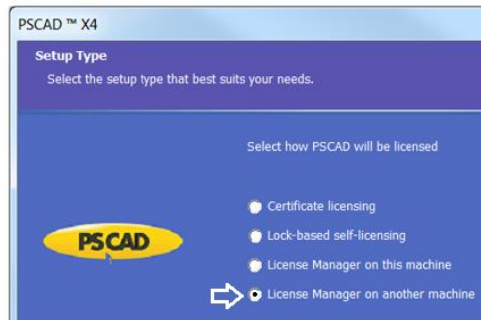


3.3.2 Setting Licensing Automatically – Specifying the Server during the PSCAD Installation

If licensing will be hosted on a server and shared over the network, the server may be specified during the PSCAD installation. This would allow PSCAD to automatically be licensed upon startup, instead of the user having to configure licensing post-installation as per Section 3.3.1.

Perform the following during the PSCAD installation (Section 2.3), when prompted:

- a. Select “License Manager on another machine”:



- b. Enter the server name or IP address when prompted. For example, the name PSCADServer has been entered in the following view:



- c. Following the installation, when PSCAD is launched, if the license host machine is set up, licensing should be automatically activated, and in accordance with the setting applied in Step (b).



3.3.3 Setting Licensing Automatically – Specifying the Server using a Script

If licensing will be hosted on a server and shared over the network, the server may be specified by writing and applying a script. This would allow PSCAD to automatically be licensed upon startup, instead of the user having to configure licensing as per Section 3.3.1.


Perform the following on the client machine:

- a. Install PSCAD (Section 2.3).
- b. Write and apply a script to modify the Registry keys:

Registry Key	Value	Setting
HKEY_LOCAL_MACHINE\SOFTWARE\Manitoba HVDC Research Centre Inc\PSCAD\License	LmgrHost	Enter the name of the server followed by a space and port "2053" For example: PSCADServer 2053
	Timestamp	This will have to be set somehow ^[1]
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Manitoba HVDC Research Centre Inc\PSCAD\License	LmgrHost	Enter the name of the server followed by a space and port "2053" For example: PSCADServer 2053
	Timestamp	This will have to be set somehow ^[1]

- 1. The timestamp value is the value returned by the Windows `__time32_t(...)` function, which is the number of seconds since Jan 1, 1970.

For example, at exactly, Fri May 10 12:44:20 2019, `__time32_t(...)` returns the following value, 1557510260

The registry value would then be, 

- c. When PSCAD is launched, if the license host machine is set up, licensing should be automatically applied, and in accordance with the script applied in Step (b).



3.4 Switching to a Different License (Same Machine, Different License)

This section provides instructions for setting up a license (License “2”) on a computer on which a license is currently already installed (License “1”). This procedure requires that the license database file and USB lock for License 1 be replaced with those for License 2.

Replace License 1 with License 2 as follows:

- Remove the USB lock for License 1, and store it away securely.
- Remove the license database file for License 1 using one of the methods listed in Section 3.2.
- Securely plug in the USB lock for License 2.
- Install the license database file for License 2 as per Section 3.1.1 (preferred) or per Section 3.1.2 (only supported with PSCAD v4.5.3 and earlier).

License 2 may now be activated to run PSCAD (Section 3.3).



3.5 Renumbering a License (Same Product License, New License Number)

This section provides instructions for renumbering an existing license (License 1) to a new license (License 2) containing modified products. During this procedure, a standalone utility called the License Update Utility modifies and renumbers the USB lock, and installs the new license database file.

A license is typically renumbered in the following situations:

- When a Professional “V4” license, which may only run v4.2, is updated to an “X4” license, which may run v4.2 and later.
- When a license is downgraded, in which some of the products are downgraded or removed.
- A permanent license is converted to temporary.

Refer to the document [Updating a License](#) for instructions.



3.6. Moving the License to a Different Server (Same License, Different Machine)

This section provides instructions for moving a license from one server (Server A) to another one (Server B). Steps for installing and configuring the software and license on Server B are included.

Requirements

1. Windows administrative privileges if operating on Windows Vista or later
2. The associated PSCAD USB lock

Note

This installation assumes that License Manager v1.42 or later will be installed on Server B.

Proceed as follows:

- a. Review your License Manager network settings on Server A, for applicability on Server B as follows:
 - On Server A, run the Setup Tool from the Windows Start menu (All Programs | PSCAD | License Manager | Setup Tool).
 - Review the settings in each tab, and take note of any settings you will also use on Server B.
 - If the Networks tab is tab used, this information will not have to be entered manually when configuring the License Manager on Server B (at Step c, below). This information will have been saved in a file, located as listed below, and may simply be copied to Server B:

C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager\AuthorizedIPs.xml

- b. Install the license database file on Server B using one of the following two methods:
 - **Method 1:** If the license database file “Imgr-hvdc” is available on Server A at the location listed below, simply copy it over to two places on Server B per Section 3.11:

C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager
 - **Method 2:** If you have the associated License.txt file, install the license on Server B using the “License Update Utility” per Section 3.1.1.
- c. Launch the License Manager installation on Server B as per Section 2.5.1. Note the following:
 - Any prerequisites will automatically be installed during this process (see Section 2.2).
 - When the Setup Tool displays automatically, use this tool to configure the License Manager as per Section 2.5.2, and if applicable, per the settings obtained in Step (a) above.
 - At Section 2.5.1 Step (i), select “No – don’t install/update any licenses”, as this has already been done in Step (b) above.
- d. Plug in the USB lock on Server B.
- e. On all client computers that will be obtaining licensing from Server B over the network, activate licensing from Server B as per Section 3.3.



3.7 Moving a License between Client Machines (License is physically moved over from one Client Machine to others)

This procedure allows a license to be shared between multiple client computers by physically moving the lock, without sharing the license over the network. A license database file will be installed on each client computer, and PSCAD will run on the computer currently hosting the USB lock.

Requirements

1. Windows administrative privileges if operating on Windows Vista or later
2. The associated PSCAD USB lock and License.txt file

Set up the software and licensing on each client computer as follows:

- a. Install PSCAD (and GFortran if applicable) as per Section 2.3.
- b. Install the license database file on each client machine using one of the following two methods:
 - **Method 1:** If the license database file “lmgr-hvdc” has already been installed on a computer, simply copy it over to the two required locations on each client machine as per Section 3.11.
 - **Method 2:** If you have the associated License.txt file, install the license on each client machine using the “License Update Utility” (Section 3.1.1).
- c. For each machine, plug in the USB lock and activate the license as per Section 3.3.

Once each client machine has been set up, PSCAD may be run any of the machines by simply plugging in the USB lock on that machine.

If there are any issues with the licensing, refer to Section 4.4.



3.8 Switching between Different Licenses on a Client Machine (Same Machine, Different Licenses)

This section provides the steps for setting a client computer to switch back and forth between two or more PSCAD licenses.

In this procedure, two example licenses will be set up, License A and License B. Their respective license database files will be generated and stored on the client machine, so that switching between these licenses is facilitated.

Simple instructions for duplicating this setup on any other client machines are also included.

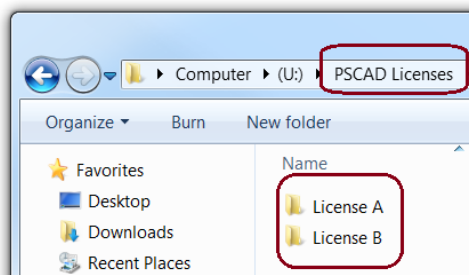
Requirements

1. Windows administrative privileges if operating on Windows Vista or later
2. The associated PSCAD USB lock for Licenses A and B
3. The associated License.txt file for Licenses A and B

Note

A script may be created to automate these steps.

1. Set up new folders for storing your PSCAD license database files for License A and License B: In a convenient and backed up location (e.g. on a network drive), create a new folder (“PSCAD Licenses”) containing two sub-folders (“License A” and “License B”). This should look similar to the following:



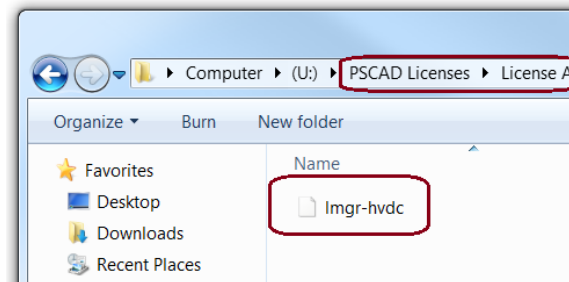
2. For License A, generate and store your license database file as follows:

- a. If not already installed, install the software as per Section 2.3.

Note

Any required prerequisites will automatically be installed during this process (see Section 2.2).

- b. Install the license as per Section 3.1.1. This step requires the License.txt file for License A.
- c. Test your setup by trying to activate the license as per Section 3.3. Troubleshoot if required as per Section 4.4.
- d. Once the licensing is working, make a copy of the file “Imgr-hvdc” from the following location:
C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager
- e. Paste the copied Imgr-hvdc file to your new “License A” folder. For example, your folders should look similar to the following:



3. For License B, delete the license database file as per Section 3.2, then generate and store the license database file as per Step (2), above. Ensure to use the License.txt file, USB lock and folder that are associated with License B.
4. To switch between the different licenses, proceed as follows:
 - a. Plug in the associated USB lock.
 - b. Make a copy of the preferred Imgr-hvdc file in the corresponding folder (“License A” or “License B”).
 - c. Delete the Imgr-hvdc file from the following two locations:
 - C:\Windows\
 - C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager\
 - d. Paste the copied Imgr-hvdc file to the above two locations.
 - e. PSCAD should be licensed to run using the preferred license.
5. This configuration may be easily duplicated on any other client machines that will be switching between these licenses. Simply copy the entire “PSCAD Licenses” folder over to the other client machines, and follow the instructions in Step (4) to switch between the licenses.



3.9 Configuring PSCAD to Use Legacy Licensing

This section provides instructions for configuring PSCAD to use “legacy licensing”, which uses a combination of USB lock and license database file (i.e. lock-based licensing). The other licensing configuration (certificate) is not covered in this manual.

Requirement

PSCAD is installed (Section 2.3)

Applicability

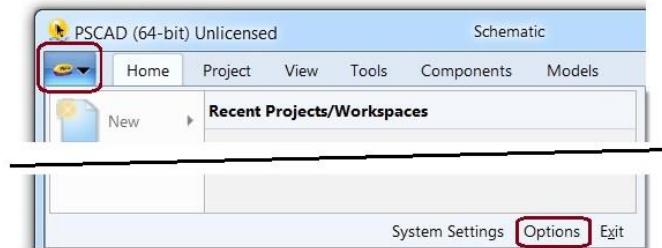
This instruction is applicable to PSCAD v4.5.3 and later.

If it has been determined that the licensing configuration is set incorrectly to Certificate Licensing (per Section 3.1.2 or Section 3.3), switch the configuration as follows:

- a. Launch PSCAD according to your Windows operating system, and your PSCAD version and edition:
 - If operating on Windows XP / Vista/ 7 / 8 / 8.1 proceed as shown:

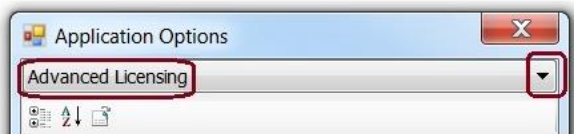
PSCAD Version	Educational Edition	Professional Edition
v4.5.0	<p><u>Windows 32-bit or 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> <div style="border: 1px dashed gray; padding: 5px;"> <p>PSCAD</p> <p> PSCAD X4</p> <p> PSCAD (32-bit)¹</p> <p> PSCAD (32-bit, non-elevated)²</p> </div> <p>Note The 64-bit version of PSCAD is not available for the Educational Edition at v4.5.0. It is however available as of v4.5.1 and later.</p>	<p><u>Windows 32-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> <div style="border: 1px dashed gray; padding: 5px;"> <p>PSCAD</p> <p> PSCAD X4</p> <p> PSCAD (32-bit)¹</p> <p> PSCAD (32-bit, non-elevated)²</p> </div> <p><u>Windows 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> <div style="border: 1px dashed gray; padding: 5px;"> <p>PSCAD</p> <p> PSCAD X4</p> <p> PSCAD (64-bit)¹</p> <p> PSCAD (64-bit, non-elevated)²</p> </div>
v4.5.1 and later	<p><u>Windows 32-bit or 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> <div style="border: 1px dashed gray; padding: 5px;"> <p>PSCAD</p> <p> PSCAD X4</p> <p> PSCAD v4x (non-elevated)²</p> <p> PSCAD v4x¹</p> </div> <p>Note The links will launch the PSCAD version corresponding to the computer’s operating system (i.e. 32-bit or 64-bit), for both the Professional and Educational Editions.</p>	
<ol style="list-style-type: none"> 1. Select this option if you have Windows administrative privileges on your computer. 2. Select this link if you do not have Windows administrative privileges on your computer, and/or you are operating on Windows XP. <p>Note PSCAD v4.6 may not be run on Windows XP.</p>		

- Or, if operating on Windows 10, there is one shortcut in the Windows Start menu. In v4.6.1 and later, this shortcut launches the application without Windows administrative privileges. In v4.6.0 and earlier, this shortcut will try to launch the application with Windows administrative privileges. If you do not have these privileges, simply set the shortcut to run without these privileges (right-click on the shortcut, go Properties | Advanced, de-select the checkbox “Run as administrator”, and select “OK” and “OK” again).
- b. Close out of all automatically displayed dialog boxes.
 - c. Display the “Application Options” dialog box (from the PSCAD Start button, select “Options”).

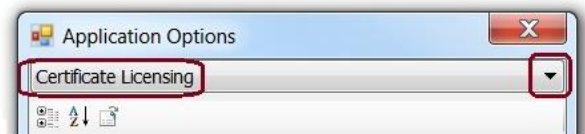


- d. Select the “Advanced” or “Certificate” licensing page from the drop-down menu, as applicable.

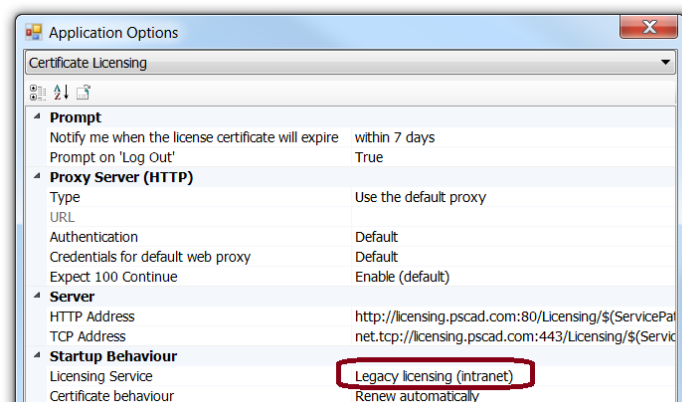
**"Advanced Licensing" Page
v4.5.3 and v4.5.4**



**"Certificate Licensing" Page
v4.5.5 and Later**

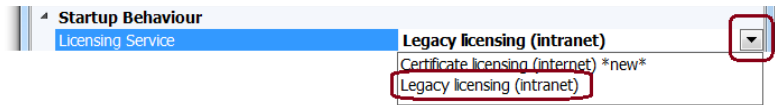


- e. Review the “Startup Behaviour – Licensing Service”:

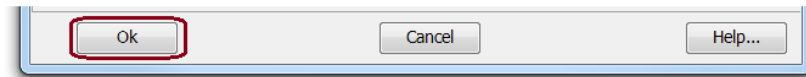


f. If the above field is not set to “Legacy Licensing”, perform the following:

- Click on the drop-down menu, and select “Legacy licensing (intranet)”.



- Select “Ok” at the bottom left-hand corner to apply the change.



g. The licensing configuration will now be set to legacy licensing, to allow lock-based licensing.

h. Proceed as required:

- Go to Section 3.1 to install the license.
- Go to Section 3.3 to activate the license.



3.10 Improving a License (Same License, Improved Products)

This section provides instructions for improving a license, which includes any of the following:

- A Single-user license is converted to a Multi-user license.
- Products are added to a license (e.g. add another seat).
- A temporary license is converted to permanent.

A license improvement may be initiated by contacting our sales desk (sales@pscad.com). Ensure to include your license number in your request (if you do not know your license number, refer to Section 4.5 to determine this).

Once you are authorized for the improvement, you will receive a new License.txt file containing all products for this license.

Requirements

1. Windows administrative privileges if operating on Windows Vista or later
2. The License.txt file from our sales desk
3. The associated USB lock

Note

If you encounter any issues, refer to Section 4.3.

On the machine/s hosting the license, proceed as follows:

- a. Save the License.txt file.
- b. Remove the existing license database file using one of the methods listed in Section 3.2.
- c. Install the new License.txt file as per Section 3.1.1.

Licensing may be activated (Section 3.3).



3.11 Copying a License Database File to another Computer

This procedure copies a license database file that was generated on one computer (Computer A), and saves it to another (Computer B).

This procedure would be useful for example when receiving a license database file from our Support Desk, or from a colleague. The license database file (Imgr-hvdc) would have been generated on Computer A using our licensing tool and a License.txt file. Once copied over to Computer B, the license database file will be used in conjunction with the associated USB lock to authenticate licensing on that machine.

There are two methods for performing this task, automatic and manual, as outlined below.

3.11.1 Automatic Procedure

Requirements

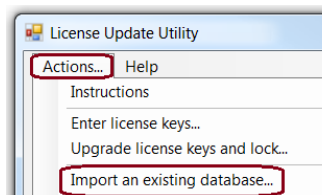
1. This procedure is supported with License Manager v1.43 and later.
2. Windows Administrator privileges on Computer B

On Computer A:

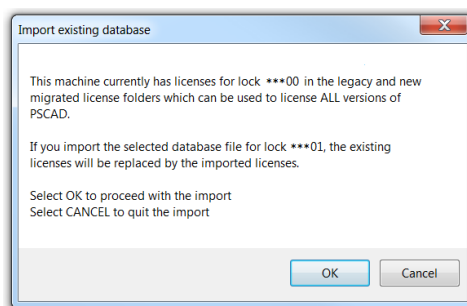
- a. Make a copy of the lmgr-hvdc file located in the following location, and save it to a memory device:
 - C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager\

On Computer B:

- a. Plug in the memory device.
- b. If applicable, close all instances of PSCAD and stop the License Manager service.
- c. Download the latest version of the License Update utility from this [link](#), extract the files to a local drive, and run the “LicenseUpdate.exe” file.
- d. Delete any license database files that may already be installed as per Section 3.2.
- e. Select “Import an existing database” from the “Actions” menu.



- f. When prompted, browse to the lmgr-hvdc file on the memory device, and select “Open”.
- g. A message similar to the following will be displayed. Select “OK” to copy the file.



- h. When the message “Synchronization complete” is displayed in the tool, the license database file has been saved to the two required locations. The tool may be closed.
- i. To activate the license, refer to Section 3.3.



3.11.2 Manual Procedure

Requirement

Windows Administrator privileges on Computer B

On Computer A:

- a. Make a copy of the Imgr-hvdc file located in the following location, and save it to a memory device:
 - C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager\

On Computer B:

- a. Plug in the memory device.
- b. Save the Imgr-hvdc file to the following two locations:
 - C:\Windows\
 - C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager\

Notes

1. If "Imgr-hvdc" file already exists at either of the above locations on Computer B, delete it first.
 2. If any of the folders in the above paths are missing on Computer B, create them.
 3. Do not change the file paths or file name.
- c. To activate the license, refer to Section 3.3.



4. Resolving Issues

Refer to the following sections if you encounter any issues:

- See Section 4.1 for software installation issues
- See Section 4.2 for issues when configuring the Standalone License Manager
- See Section 4.3 for issues when using the License Update Utility to install a license
- See Section 4.4 for issues when using the PSCAD application to install or activate a license
- See Section 4.5 for instructions on detecting your PSCAD version and license number
- See Section 4.6 to contact our support desk

4.1 Software Installation Issues

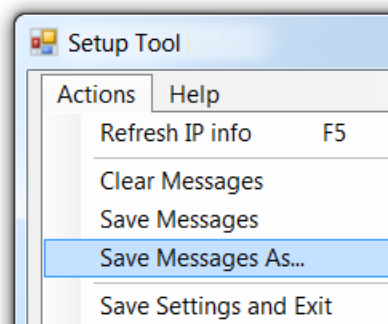
If you encounter any software installation issues, you may troubleshoot them using the “Resolving Installation Issues” manual, which may be downloaded from this [webpage](#).

If you are still unable to resolve the problem, please contact our support desk as per Section 4.6. Ensure to include as much information as possible to describe when the problem occurred and screenshots of any error messages, as well as a “GetInfo” log file, which is generated as per Step 4.4 (a).

4.2 Issues with Configuring the Standalone License Manager

If you encounter any issues when using the Setup Tool to configure the Standalone License Manager, proceed as follows:

- a. Select “Save Messages As” in the “Actions” menu.

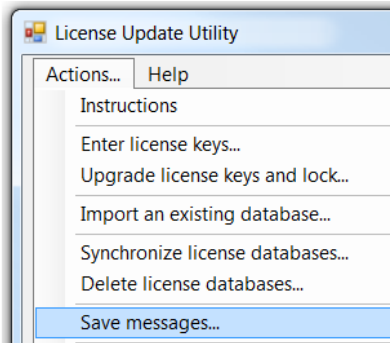


- b. When prompted, browse to a folder in which to save the messages, and select “OK”. In the specified folder, the messages will be saved to a log file named “Setup Tool”, followed by the date and time.
- c. Forward the saved log file to our support desk as per Section 4.6.2, along with any relevant details.

4.3 Issues with using the License Update Utility

If you encounter any issues with installing, removing, replacing, or updating your license using the License Update Utility (Section 3.1.1), proceed as follows:

- a. Select “Save Messages” in the “Actions” menu.



- b. When prompted, enter a file name and browse to a folder in which to save the messages. The messages will be saved as a log file.
- c. Forward the following to our support desk (Section 4.6.2):
 - A description of the issue.
 - The License Update Utility log file.
 - The log files as specified in Section 4.4.

4.4 Issues with Installing or Activating a PSCAD License

If you encounter any issues with installing or activating a PSCAD license, please forward the following log files as applicable for our review as per Section 4.6:

- a. **GetInfo.txt file:** This file is available on computers running the Standalone License Manager or PSCAD, as follows:
 - Download our latest GetInfo utility from this [link](#), unzip the GetInfo32.exe file, and save this file to your computer.
 - Run the unzipped GetInfo32.exe file, and this utility will launch. When prompted whether to test shortcuts, select “No”.
 - The utility will display the results and save the generated log file. The location of the log file will be displayed.

- b. **PscadLmgr.txt file:** This file is available on computers running the PSCAD application. The location of this file is related to your Windows operating system, as follows:

- On Windows XP:

C:\Documents and Settings\All Users\Application Data\Manitoba HVDC Research Centre\LicenseManager

- On Windows Vista and later (send all as available):

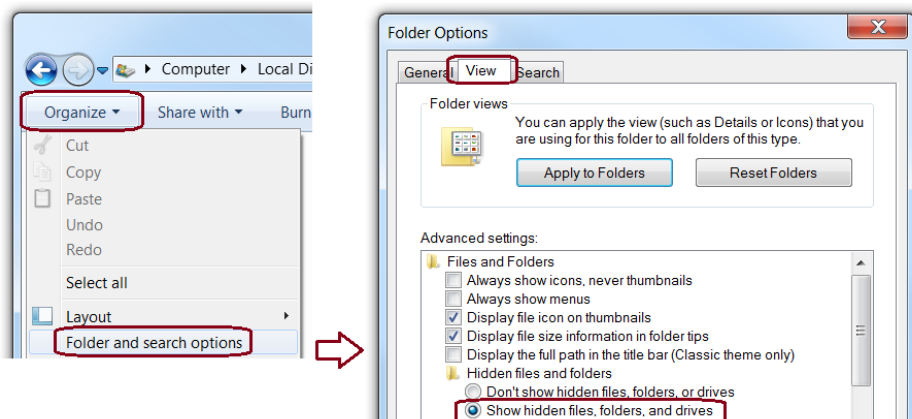
C:\Users\All Users\Manitoba HVDC Research Centre\LicenseManager

C:\ProgramData\Manitoba HVDC Research Centre\LicenseManager

C:\Users\<Your User ID>\AppData\Local\Manitoba HVDC Research Centre\LicenseManager

Note

If the AppData folder is hidden, set hidden folders to display as shown:



- c. **Lmgrd-log.txt file:** This file is available on computers running the Standalone License Manager. The location of this file is related to your Windows operating system, in the same locations as listed in Step (b) above.



4.5 Detecting your PSCAD Version and License Number

When requesting technical support from our support desk, your PSCAD version and license number are required. These may be detected using two manners.

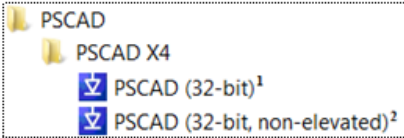
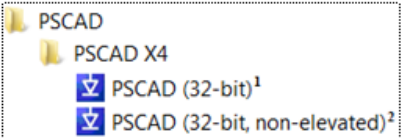
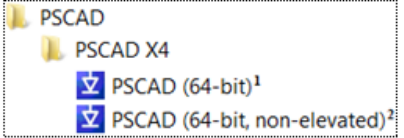
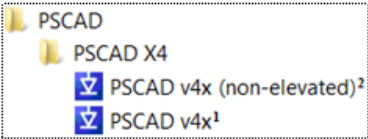
4.5.1 Use the PSCAD application

Note

The PSCAD application may only be used to detect the license number if the license is already activated. If the license is not already activated, refer instead to Section 4.5.2.

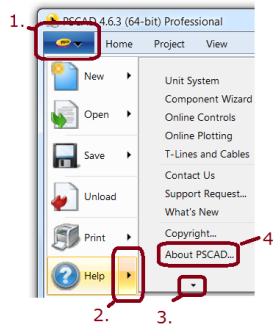
a. Launch PSCAD according to your Windows operating system, and your PSCAD version and edition:

- If operating on Windows XP / Vista/ 7 / 8 / 8.1 proceed as shown:

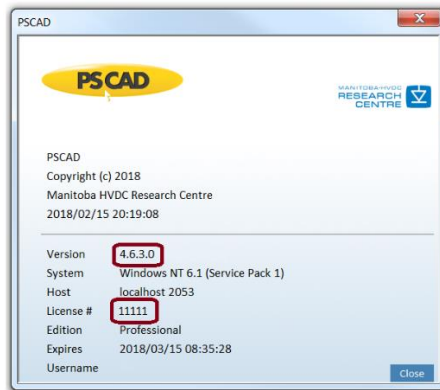
PSCAD Version	Educational Edition	Professional Edition
v4.5.0	<p><u>Windows 32-bit or 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p>  <p>Note The 64-bit version of PSCAD is not available for the Educational Edition at v4.5.0. It is however available as of v4.5.1 and later.</p>	<p><u>Windows 32-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> 
		<p><u>Windows 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p> 
v4.5.1 and later	<p><u>Windows 32-bit or 64-bit</u></p> <p>From the Windows Start menu, select All Programs, then go:</p>  <p>Note The links will launch the PSCAD version corresponding to the computer's operating system (i.e. 32-bit or 64-bit), for both the Professional and Educational Editions.</p>	
<ol style="list-style-type: none"> 1. Select this option if you have Windows administrative privileges on your computer. 2. Select this link if you do not have Windows administrative privileges on your computer, and/or you are operating on Windows XP. <p>Note PSCAD v4.6 may not be run on Windows XP.</p>		



- Or, if operating on Windows 10, there is one shortcut in the Windows Start menu. In v4.6.1 and later, this shortcut launches the application without Windows administrative privileges. In v4.6.0 and earlier, this shortcut will try to launch the application with Windows administrative privileges. If you do not have these privileges, simply set the shortcut to run without these privileges (right-click on the shortcut, go Properties | Advanced, de-select the checkbox “Run as administrator”, and select “Ok” and “Ok” again).
- Launch PSCAD and close out of any automatically displayed dialog boxes.
 - Ensure the license is activated (Section 3.3).
 - Display the “About PSCAD” dialog box:



- The PSCAD version and license number will be displayed:



Note

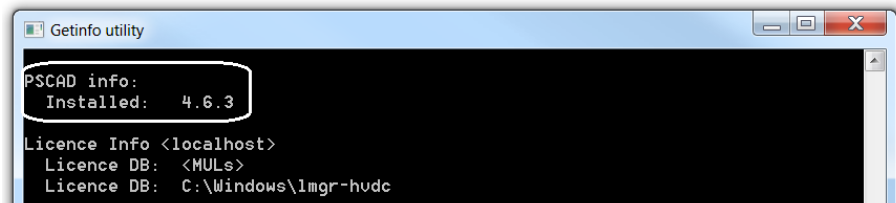
If the version and license number are not displayed, then try the method listed in Section 4.5.2.

4.5.2 Use the GetInfo Utility

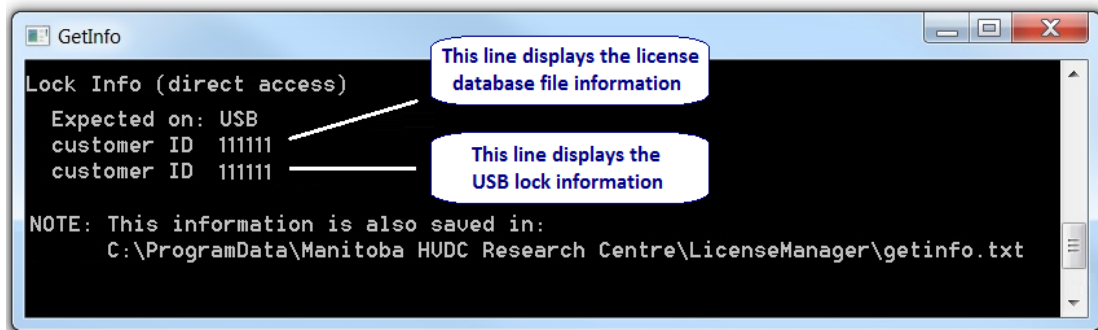
The GetInfo utility may be used to detect a USB lock license number, license database file, and any PSCAD versions that are installed on a machine.

Proceed as follows:

- a. Ensure the USB lock is securely plugged in.
- b. Download our latest “GetInfo32.zip” utility from this [link](#), unzip the GetInfo32.exe file, and save this file to your computer.
- c. Run the GetInfo32.exe file, and this utility will launch. When prompted whether to test shortcuts, select “No”.
- d. The utility will display information about your system. Scroll down to “PSCAD info: Installed”. All installed versions will be displayed.



- e. Scroll down further to “Lock Info (direct access)”. If detected, the licensing information related to the license database file and USB lock will be displayed, as shown in the following screenshot.





4.6 Contacting the Support Desk

If you are unable to resolve any installation or licensing issues, a support request may be submitted to our support desk.

4.6.1 Relevant Information for a Support Request

Ensure to include all relevant information in your support request to expedite assistance, including:

- Your PSCAD version and license number (determined as per Section 4.5)
- A detailed description of the issue
- Any log files as specified in Sections 4.2 to 4.5
- Screenshots of any error messages

4.6.2 How to Submit a Support Request

Contact the support desk in one of the following two manners, ensuring to include the relevant information outlined in Section 4.6.1:

2. Send an e-mail to support@pscad.com.
3. Or, submit the support request through the PSCAD application as described in the references on this [webpage](#).



Appendix A: Network Licensing

This appendix describes PSCAD network licensing, which includes hosting a PSCAD license on a server and sharing licensing with client machines over the network.

Network licensing capabilities were enhanced at License Manager 1.42 (at the PSCAD v4.6.1 release), including a simplified setup, and the new ability to license across multiple networks.

Version 1.42 and later supports the following three modes:

- “This machine only (private)”: Licensing is limited to the host computer (i.e. self-licensing mode),
- “Everyone (public)”: Licensing is shared with clients from any network able to reach the server, and
- “Authorized networks (protected)”: Licensing is limited to specified networks.

Notes

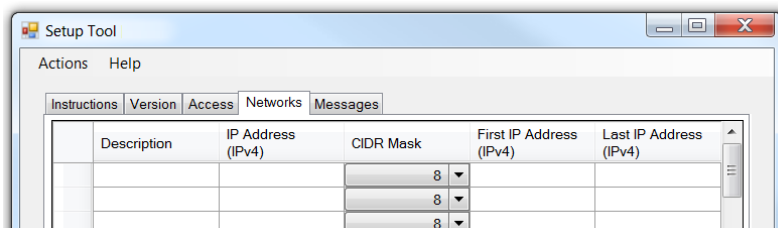
1. Any PSCAD client on the server is automatically permitted access to the licensing.
2. See Appendix A.1 below for special information regarding authorized networks mode setup.

The License Manager Setup Tool, which is installed alongside License Manager software, is used to select and configure the required mode. See Section 2.5 for installation and setup instructions.

A.1 Setting up the Authorized Networks Mode

This appendix provides some tips for using the authorized networks mode, in which licensing will be permitted only across authorized networks or sub-networks.

Authorized networks are specified using the “Networks” tab in the License Manager Setup Tool, as shown below. This tab is set up as per Section 2.5.2.



All ranges of internal networks or sub-networks that are allowed access to the license are to be identified in this tab. These would include wired and wireless networks or sub-networks, as well as virtual private networks. The following is an example of authorized networks and sub-networks that have been configured in the Setup Tool:

1. Enter description (for your own information, disregarded by the utility)

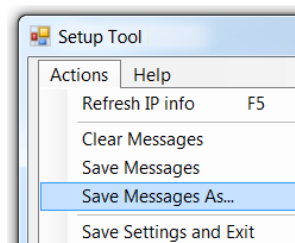
2. Enter the net/sub-net (Enter "0" for any digits that will be disregarded)

3. Select the CIDR Mask to specify restriction on this net/sub-net

Description	IP Address (IPv4)	CIDR Mask	First IP Address (IPv4)	Last IP Address (IPv4)
Net 10 (wired)	10.0.0.0	8	10.0.0.0	10.255.255.255
Subnet 125.10 (wireless)	125.10.0.0	16	125.10.0.0	125.10.255.255
Subnet 125.11 (wireless)	125.11.0.0	16	125.11.0.0	125.11.255.255
Subnet 192.10 (wired)	192.10.11.0	24	192.10.11.0	192.10.11.255
VPN 196 (wired)	196.10.10.0	24	196.10.10.0	196.10.10.255

4. Automatically populated:
The range of supported IP addresses for each net/subnet (as determined by the 2nd and 3rd column entries)

Once the settings have been entered, they may then be saved:



Note

These settings will be saved to the following location:

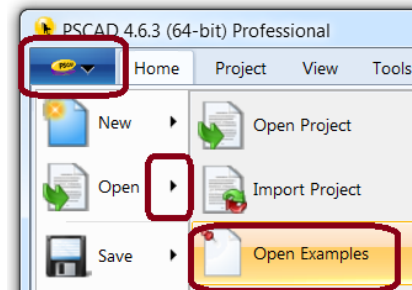
C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager\AuthorizedIPs.xml

If you are unsure which networks require authorization, please refer to your IT staff. If there are any questions using this tool, please feel free to contact our support desk (support@pscad.com).

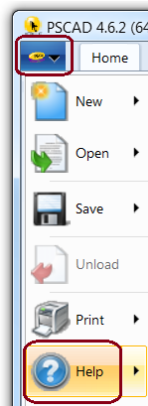
Appendix B: Resources for New Users

The following resources may assist new users to become familiar with PSCAD:

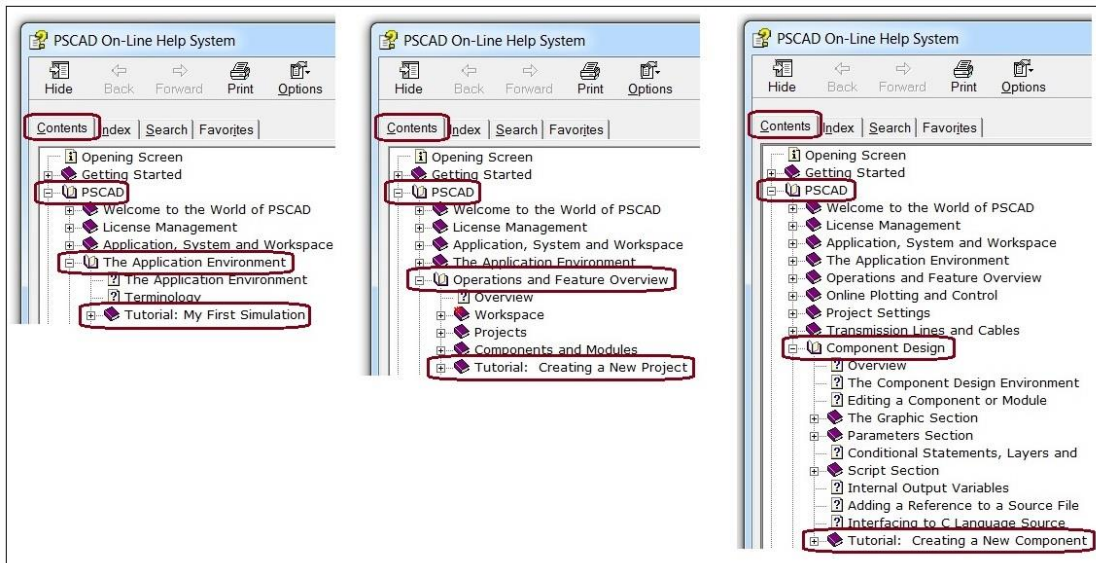
- The [Knowledge Base](#) contains videos, user guides, examples, tutorials, webinars, and manuals.
- Examples and tutorial projects to view and run are available through the “PSCAD” start button:



- The Help system provides information on PSCAD tools and features:



- Three tutorials for designing PSCAD cases are available in the Help system:





DOCUMENT TRACKING

Rev.	Description	Date
0	Initial	07/Dec/2012
1	Generalized to cover v4.5.0 to v4.5.2; Amalgamated license activation for Server/Client computers; Revised support desk contact information; General corrections and improvements	26/Apr/2013
2	Minor updates and improvements for v4.5.2	14/Jun/2013
3	Removed an outdated installation screenshot	03/Jul/2013
4	Minor updates for v4.5.3 release and Intel® 13 support; minor corrections; updated title page	22/Nov/2013
5	Updated the title; general improvements and reorganizing; new info re v4.5.4 release and Advanced Licensing; new Sections(1.3, 4, 5, 9, 10, 11, 14, 15.6)	28/Nov/2014
6	Updated to v4.6.0 release	20/Apr/2015
7	Updated to v4.5.5 release; Added Appendix B and new sub-section in Section 8.3	30/Nov/2015
8	Re-organized and updated most of the manual; Amalgamated the manual "Updating "PSCAD" into this one; Removed LiveWire information; Updated to v4.6.1 and License Manager v1.42 releases; Added new sections – 1.5, 3.2, 3.4, 3.7, 3.8	12/Sep/2016
9	Update to Appendix B	27/Oct/2016
10	Updated Appendix B, and moved content to Section 2.1	04/Nov/2016
11	Minor updates to Sections 2.1.1, 3.1.1, 3.1.2, 4.4; Removed instructions and information for LM1.41 and earlier; Removed naming convention "Policy-based Licensing Mode"; Update to Section 1.5, Section 2.52, and Appendix A	23/Jan/2017
12	Updated manual re Single-User Licensing (SUL) no longer sold; Added Section 3.10	14/Feb/2017
13	Updated to new releases PSCAD v4.6.2 and License Manager v1.43; Removed instructions from Section 3.5 to new standalone document ; New Section 3.11; General improvements	31/May/2017
14	Fixed linking	31/May/2017
15	Updated to new releases PSCAD v4.6.3 and License Manager v1.44	26/Mar/2018
16	Update to New Brand Guidelines; Updated Sentinel Drivers link to v7.6.0	02/May/2018
17	Update to New Brand Guidelines	18/Jul/2018
18	Update to Sections 1.5 and 3.3	27/May/2019