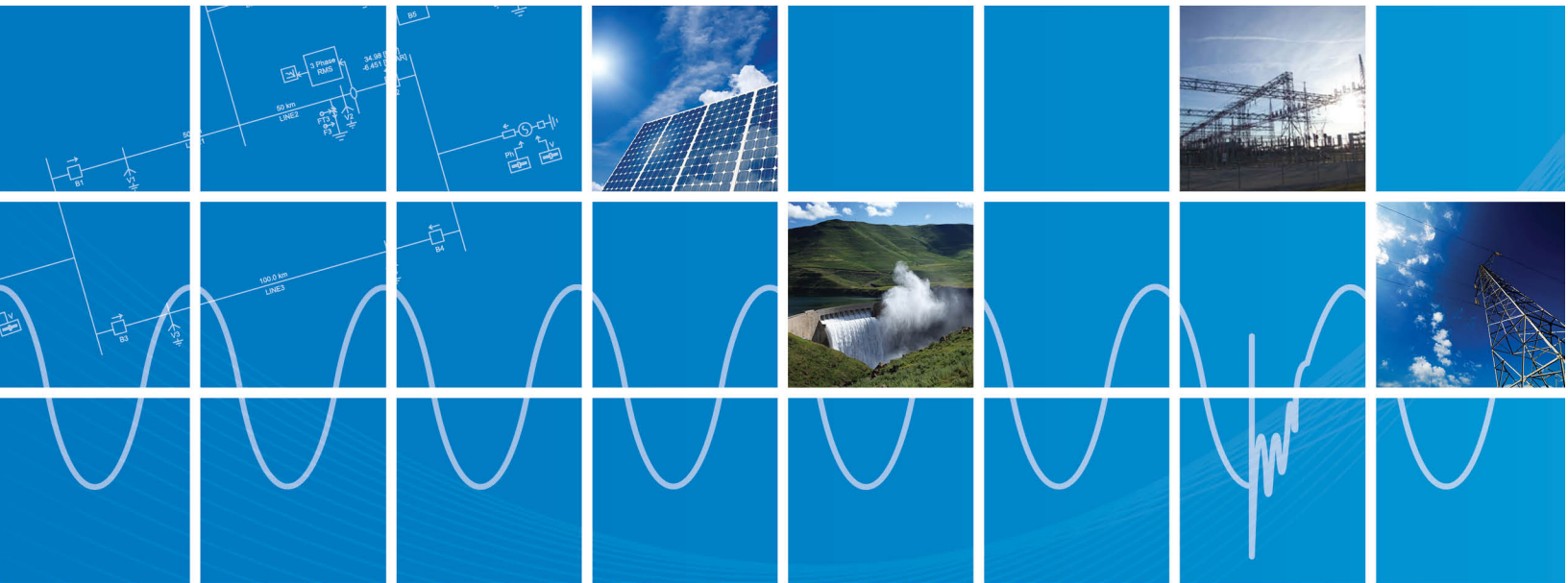




Resolving PSCAD Lock-Based Licensing Issues

Written for PSCAD X4 and V5

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1. Introduction

1.1. Overview

This manual presents known issues and solutions related to PSCAD lock-based licensing. It is intended to be a continuously developing diagnostic tool as the software evolves. If you encounter any issues that are not covered herein, please forward the details to our Support Desk (support@mhi.com).

The information in this manual is applicable to PSCAD X4, which includes version 4.3.0 and later, and to PSCAD X5, and covers the following topics:

- Section 2: Issues with lock-based licensing
- Section 3: Issues with licensing diagnostic tools
- Section 4: Issues with lockless licensing

Note

Lockless licensing was discontinued as of PSCAD v4.5.4

- Appendix A: Using the Fortran Medic utility
- Appendix B: Using the Get Info utility
- Appendix C: Requirements for network licensing
- Appendix D: Instructions for displaying hidden folders

1.2. Related Support Documents

Refer to this [article](#) for other, related, support documents.



2. Issues with Lock-Based Licensing

2.1. Location of Licensing Log Files

The locations of the licensing log file “PscadLmgr.txt” on the PSCAD machine are as follows:

PSCAD versions	Windows Platform	Log file locations	Comments
PSCAD 3.0.0 - 4.2.1	Windows XP	C:\Windows\PscadLmgr.txt	Lock-based licensing
PSCAD 3.0.0 - 4.2.1	Windows Vista, Windows 7 and better	C:\Windows\PscadLmgr.txt	Lock-based licensing
PSCAD 4.3.0 - 4.5.5	Windows XP	C:\Documents and Settings\All Users\Application Data\Manitoba HVDC Research Centre\License Manager\PscadLmgr.txt	Certificate and lock-based licensing
PSCAD 4.3.0 - 4.5.5, PSCAD 4.6.0 - 4.6.3 Update 3	Windows 7, Windows 10	C:\ProgramData\Manitoba HVDC Research Centre\License Manager\PscadLmgr.txt	Certificate and lock-based licensing
		C:\Users\All Users\Manitoba HVDC Research Centre\License Manager\PscadLmgr.txt	Certificate and lock-based licensing
		C:\Users\YOUR-USER-ID\AppData\Local\Manitoba HVDC Research Centre\License Manager\PscadLmgr.txt	Certificate and lock-based licensing
PSCAD 4.6.3 Update 4, PSCAD v5	Windows 7, Windows 10	C:\ProgramData\Manitoba HVDC Research Centre\License Manager\PscadCert.txt	Certificate licensing only (new)
		C:\ProgramData\Manitoba HVDC Research Centre\License Manager\PscadLmgr.txt	Certificate and lock-based licensing
		C:\Users\All Users\Manitoba HVDC Research Centre\License Manager\PscadLmgr.txt	Certificate and lock-based licensing
		C:\Users\YOUR-USER-ID\AppData\Local\Manitoba HVDC Research Centre\License Manager\PscadLmgr.txt	Certificate and lock-based licensing

The locations of the License Manager-generated log file “Lmgrd-log.txt” are as follows:

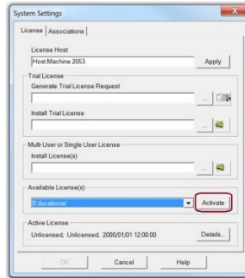
PSCAD versions	Windows Platform	Log file locations	Comments
PSCAD 3.0.0 - 4.2.1	Windows XP	C:\Windows\Lmgrd-log.txt	Lock-based licensing
PSCAD 3.0.0 - 4.5.5	Windows Vista, Windows 7 and better	C:\ProgramData\Manitoba HVDC Research Centre\License Manager\Lmgrd-log.txt	Lock-based licensing
PSCAD 4.6.0 - 4.6.3 Update 4, PSCAD v5	Windows 7, Windows 10	C:\ProgramData\Manitoba HVDC Research Centre\License Manager\Lmgrd-log.txt	Lock-based licensing

If any of these folders are “hidden”, refer to Appendix D to display them.

2.2. License Cannot be Activated

Problem

When the “Workspace Settings” dialog box is configured, and the “Activate” button is selected...



...licensing is not activated, and the following error message displays:



Cause

There are many possible causes for a licensing issue.

Solution

Proceed as follows to resolve the licensing issue:

- If the license is installed on the machine running PSCAD, view the causes and solutions in Sections 2.3 and 2.5.
- If the license is installed on a Server, view the causes and solutions in Sections 2.3, 2.4 and 2.5.



2.3. Errors within the PscadLmgr.txt File

When there is a licensing issue, the log file “PscadLmgr.txt” may be used to help identify the cause. The PscadLmgr.txt file is located on the machine that is running PSCAD, as specified in Section 2.1.

The following table lists some of the common error messages listed in the log file, as well as their possible causes and solutions.

	Error	Cause	Solution
1.	USB Error: Sentinel driver not installed, status = 524	USB lock is not plugged in.	Plug in USB lock
2.		Sentinel Drivers not installed.	Install Sentinel Drivers per the manual posted here: https://hvdc.ca/knowledge-base/read,article/360/sentinel-drivers-installation/v:
3.	Checking for lock on USB USB Error: all licenses are in use, status = 0	User is remotely logging in to machine running PSCAD.	Remotely logging in to the machine running PSCAD is not enabled in this version; you must be directly logged into the machine. This includes running PSCAD on a virtual machine, running PSCAD in Windows XP compatibility mode on Windows 7, and logging in via virtual private network. Remotely logging in is enabled in higher versions (e.g. v4.5).
4.	ERROR: Detected a second instance of < pscad.exe >	On a machine with a valid trial license, this error occurs if a second instance of PSCAD is run. A trial license permits only one instance.	Ensure only one instance of PSCAD is running NOTES 1. This limitation is applicable when trying to license a second instance with either Trial or USB-based licensing 2. This limitation is not applicable when trying to license a second instance with Certificate Licensing; a second instance of PSCAD using Certificate Licensing may be run
5.	ERROR: Invalid semaphore value ERROR: Refused to renew license [No.] for [machine name] for <PSCAD X4 Professional>. License not active.	An unexpected second instance of PSCAD was being licensed. This would occur for licensing that is only programmed to allow a single instance of PSCAD, either because the license is a legacy lock-based license with one PSCAD seat, or it is a legacy trial license.	Ensure only one instance of PSCAD is running NOTES 1. This limitation is applicable when trying to license a second instance with a lock-based license containing only one PSCAD seat. This limitation is not applicable when trying to license a second instance with Certificate Licensing; a second instance of PSCAD using Certificate Licensing may be run.
6.	To be determined	PSCAD v4.5.0 (64-bit) was launched, and an Educational License is being used. The 64-bit version may only be licensed using a Professional License.	There are three options: 1. Use the Educational License with PSCAD v4.5.0 (32-bit). 2. Use the Educational License with the 64-bit version of PSCAD v4.5.2 or later; the 64-bit version of PSCAD is enabled for later versions. If available, switch to a Professional License and use PSCAD v4.5.0.



2.4. Errors within the Lmgrd-log.txt File

When there is a licensing issue, the License Manager-generated log file “Lmgrd-log.txt” may be used to help identify the cause. This file is located on the machine that is running the License Manager, as specified in Section 2.1.

The following table lists some of the common error messages listed in the log file, as well as their possible causes and solutions:

Error	Cause	Solution
USB Error: unable to find a Sentinel lock	USB lock is not plugged in (required in order to authorize licensing)	Plug in USB lock
	Sentinel Drivers not installed.	Install Sentinel Drivers per manual posted here: https://hvdc.ca/knowledge-base/read,article/360/sentinel-drivers-installation/v :
ERROR: Unable to open and read Licence Manager database C:\Windows\lmgr-hvdc if the database file is missing, run the Enter License Key utility to create it	The license database file is not installed on the computer (required in order to authorize licensing)	If you have the license.txt file that is provided as part of your license, install it. Installation instructions may be found in the manual posted here: https://hvdc.ca/knowledge-base/read,article/312/installing-a-license-database-file/v :
ERROR: Client [machine name] [IP address] is not on the same host or net as the LM [IP address]	The client machine must be on the same network as the server. For example, the following are on the same network: <ul style="list-style-type: none"> • Server: 172.17.*.* • Client: 172.17.*.* The following are not on the same network: <ul style="list-style-type: none"> • Server: 172.17.*.* • Client: 10.100.*.* 	Options: <ol style="list-style-type: none"> 1. Move the client to the same network as the server. 2. Request “expanded licensing” from our support desk (support@pscad.com). 3. Consider switching licensing from “legacy” to “Certificate” (consult support@pscad.com).



2.5. Errors within the Get Info Utility

When there is a licensing issue, the “Get Info” utility may be used to help identify the cause. The Get Info utility may be run as per Appendix B.2.

Error	Cause	Solution
User level: User	User does not have administrator rights: Therefore, the user may not install or update a license. Note Administrator rights are not required to run PSCAD	<ol style="list-style-type: none"> 1. Obtain temporary administrator rights, then install the license 2. Administrator to install the license
License Info <localhost> Licence DB: <no licenses installed>	No license database file is installed on this machine, which is hosting the license: Therefore the licensing will not work	Install the license database file as per the manual posted here: https://hvdc.ca/knowledge-base/read/article/312/installing-a-license-database-file/v/
Local License Manager: 1.XX [installed]	The License Manager is installed on a machine that is running a Single-User License: Therefore, the licensing might not work	Uninstall the License Manager: <ol style="list-style-type: none"> 1. Stop the License Manager Service (from the Windows Start menu, browse to “Stop License Manager Service”). 2. Go to “Add or remove program” in the Windows Control Panel, and remove “Manitoba HVDC Research Centre Licence Manager”.
ERROR: Unable to read the lock [5] ... Sentinel Driver Info USB Error: unable to find a sentinel lock USB driver version 7.150.10 <driver NOT detected, or SUB lock not yet inserted> <driver NOT detected> ... Lock Info (direct access) customer ID XXXX (expected) customer ID unknown cause(s) <Dongle absent, not communicating, or wrong port in Lmgrd.ini>	USB lock is not plugged in on the machine.	Plug in the USB lock.



Error	Cause	Solution
<p>Installed Sentinel Driver Software: <non detected></p> <p>...</p> <p>USB error: USB Error: Sentinel driver not isntalled, status = 524 USB info: USB Error: Sentinel driver not isntalled, status = 524 USB port: <driver not detected, or USB lock not yet inserted> Par port: <driver not detected></p> <p>Par port: <unknown hardware address or disabled > Par port: <unknown software address or disabled ></p> <p>...</p> <p>ERROR: the License Manager appears to be unresponsive.</p>	<p>USB lock will not be detected</p>	<p>Install the Sentinel Driver</p>
<p>Lock Info (from active LM on localhost) customer ID: xxxxx (expected) customer ID: xxxxx (Licence DB) actual date: Wed Mar 18 08:22:39 2015 ERROR: the Licence Manager appears to be unresponsive. <i>[The above Licence Manager error only appears if it is running]</i></p> <p>Lock Info (direct access) Expected on: <no port specified, or Lmgrd.ini does not exist => assume USB> Expected on: USB <default> com port: USB device: USB customer ID: xxx (expected) customer ID: 0 <corrupted> lock ID: xxxxx user date: <error in date value> actual date: Wed Mar 18 08:22:39 2015</p>	<p>The USB lock does not appear to have ever been programmed, and licensing will not work.</p>	<p>Send your Get Info log file to support@pscad.com (location of log file will be listed within the utility). We will review your file and forward the solution to you.</p>
<p>Licence Host LM registry: <*. *.*.* 2053> LM hostname: *.*.*.* ping LM host: lcmpSendEcho failed: IP request timed out LM port: 2053</p>	<p>Ping Echo and Ping Reply are not enabled on the server; they must be enabled to allow licensing.</p>	<p>Enable Ping Echo and Ping Reply on the server (see Appendix C).</p>



2.6. Receiving a “Client has localhost and remotehost IPs” Error Message

Problem

The license cannot be activated, and the following error message displays in the log file:

```
ERROR: Client [machine name] <[some IP address]>, <127.0.0.1> is not on same net as LM < [some IP address]>. Client has localhost and remotehost IPs
```

Cause

This is a bug in earlier versions of License Manager (v1. 28, v1.29).

Solution

Update your License Manager to v1.30 or later.



2.7. Receiving a “FAILURE: unable to update the license DB file” Error Message

Problem

When using the License Update Utility to license PSCAD, the following message displays in the utility:

```
Unable to save license database file
  File: C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager\Imgr-hvdc
  Error: 'C:\Users\Public\Documents\Manitoba HVDC Research Centre\LicenseManager\Imgr-hvdc' Cannot find
  part of the path.
FAILURE: unable to update the licence DB file
```

This issue occurs when the following requirements are both met:

- The License Update Utility used is v1.36.0.0 (comes bundled with PSCAD v4.6.0)
- A PSCAD license has not been installed previously on this machine.

Cause

The License Update Utility released with v4.6.0 fails on a new license installation because the expected folder for the license database file does not exist, and the utility fails to create it.

Solution (1)

- Create the following folder:
C:\Users\Public\Documents\Manitoba HVDC Research Centre\License Manager
- Retry the license installation using the License Update Utility.

Solution (2)

Use a later version of the License Update Utility to license PSCAD (v1.36.2.0 or later):

- Shut down all instances of PSCAD.
- Ensure that the license.txt file is saved to your machine.
- Download the latest License Update Utility from the following link:

<http://updater.pscad.com/utilities/LicenseUpdate.zip>
- Extract the files to a local folder, and launch the “LicenseUpdate.exe” file.
- From the “Actions” menu, select “Enter license keys”.
- When prompted, browse to and select the “license.txt” file, and select “Open”.
- The license will be installed. Close the utility.



2.8. Unable to License Periodically

Problem

Sometimes a PSCAD license cannot be activated (lock-based). On those occasions, the Imgrd-log.txt file indicates that a USB lock is not detected (see Section 2.1 for location of this file):

USB Error: unable to find a Sentinel lock

Cause

This issue can occur when running PSCAD on a laptop, and sometimes using a docking station:

- If your laptop is in a docking station, your USB ports are remapped to the docking station USB ports. If you install the Sentinel drivers while your laptop is docked, the USB key will only be detected when your laptop is docked. If you install the Sentinel drivers while your laptop is not docked, the USB key will only be detected when your laptop is not docked.

Note

This is a third party Sentinel driver issue, not a PSCAD or License Manager issue.

Solution

The work-around is to always run PSCAD with your laptop in the same manner (docked or undocked). If you need to re- install the Sentinel Drivers, software and instructions may be found in the manual posted here:

<https://hvdc.ca/knowledge-base/read,article/360/sentinel-drivers-installation/v:>



2.9. PSCAD Client Cannot Contact the Server

Problem

PSCAD cannot ping the Server, nor activate a license from the Server.

Cause 1

This issue can occur if the QuickHeal Antivirus is installed, and blocking the licensing.

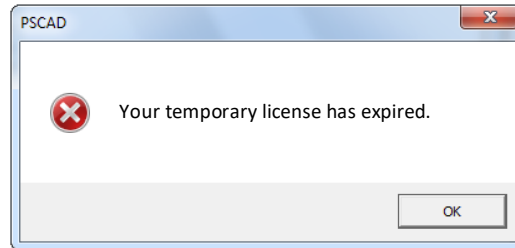
Solution 1

Uninstall QuickHeal Antivirus.

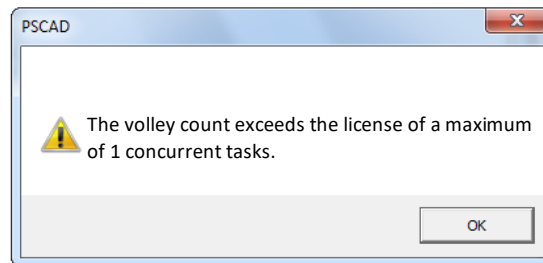
2.10. Licensing is Activated, but PSCAD claims Licensing is Expired

Problem

Immediately following a license activation, the license is returned, and the following errors display:



When "OK" is selected, the following dialog might display:



See Appendix A.5, Item 22 to see the corresponding Fortran Medic error.

Cause

This licensing issue is due to an incompatible computer setting: The computer is set to use a calendar that is incompatible with PSCAD legacy licensing, for example the Arabic Regional and Language settings. As a result, the PSCAD licensing perceives an issue with the date, and denies licensing.

System

This issue affects PSCAD v4.5.4, v4.5.5, and v4.6.0, and has been fixed in later versions.

Solution 1

Switch to PSCAD v4.6.1 or later, as the licensing appears to work when the computer is set to the Arabic Regional Language settings.

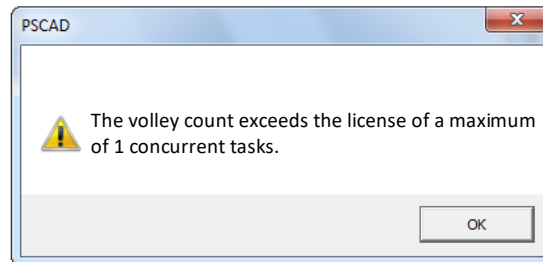
Solution 2

Or, continue to use PSCAD v4.6.0, but switch your computer to the English language, so that the computer will use the Gregorian calendar (from the Windows Start button, display the Control Panel, browse to "Language and Region", and change the setting to "English").

2.11. Receiving a “No licenses found on the selected license host” Error Message

Problem

When a license host IP address or name is entered into the PSCAD System Settings dialog box, the following errors display:



Cause 1

The license is not correctly installed on the host machine: The license file and/or USB lock are missing.

Solution 1

Redirect PSCAD to use the license from a different host machine, or

Correctly set up the licensing on the host machine. Instructions may be found in the manual posted here:

<https://hvdc.ca/knowledge-base/read,article/304/installing-and-activating-a-lock-based-license/v:>

Cause 2

This issue occurs when an incompatible version of OpenVPN client on Windows 10 is used to access the license server.

Solution 2

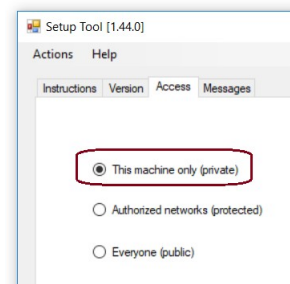
Ensure that a Windows 10 compatible version of OpenVPN client is used to access the license server.

Cause 3

The License Manager setup tool is configured improperly, to only allow self-licensing. Licensing therefore will not be shared with other machines.

This configuration can be viewed in either of the following manners on the server machine:

- Launch “Setup Tool” from the the Windows Start menu, and review the Access tab. If set to “This machine only...”, as shown below, then licensing will not be shared with other machines:



- Display the `lmgrd-log.txt` file on the server machine (see Section 2.1 for location of this file). If the following text is listed in this file, then licensing is configured only for self-licensing:
Specified: Localhost
Actual: Localhost

Solution 3

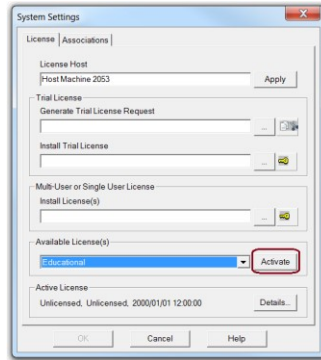
Configure the license manager to share licensing other machines:

- Launch “Setup Tool” from the the Windows Start menu.
- In the “Access” tab, select “Authorized networks” (to specify authorized networks) or “Everyone” (to allow machines from any network).
- If “Authorized networks” is selected in the above step, then specify the networks on the “Networks” tab (refer to this [article](#) for details).

2.12. License cannot be activated on Windows 10

Problem

When the “Workspace Settings” dialog box is configured, and the “Activate” button is selected...



...licensing is not activated, and the following error message displays:



Cause

On a machine running Windows 10, the PSCAD USB lock can not be detected using an earlier version of Sentinel USB Drivers (v7.5.8).

Solution

- Uninstall current Sentinel Drivers.
- Install Sentinel Driver 7.5.9 from the following link (or find a later version):

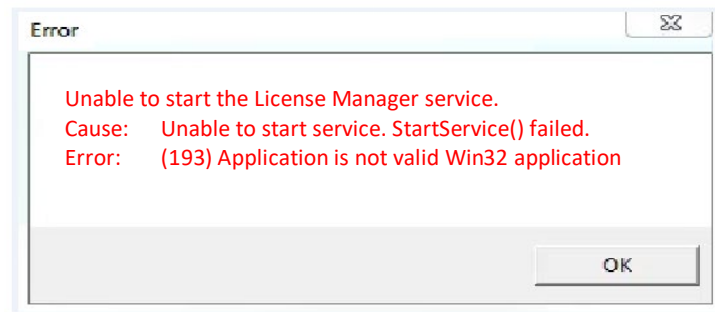
http://updater.pscad.com/utilities/USBDrivers_7.5.9.zip

- Log out then log back in to your machine to apply the change.
- Retry licensing PSCAD.

2.13. Receiving a “(193) Application is not valid Win32 application” Error Message

Problem

When attempting to start the License Manager, either manually or automatically upon restarting a computer, the following error displays, and the License Manager fails to start:



Cause

This issue occurs when one or both of the following conditions is true:

- In addition to the standard “Program Files” folders on your system drive (e.g. “C:\Program Files\” and “C:\Program Files (x86)\”), there is another folder or file named 'Program' (e.g. “C:\Program for Calculating Taxes\”), and/or
- In addition to the standard “Common Files” folders in your “Program Files” folders (e.g. “C:\Program Files\Common Files” and “C:\Program Files (x86)\Common Files”), there is another folder or file containing the word “Common” (e.g. “C:\Program Files (x86)\Common Tasks at Work”).

When the Windows Service Control Manager (Services.exe) tries to start the Server service, the program verifies the following paths:

- SystemDrive\Program
- SystemDrive\Program Files\Common

If the Program or Common paths exist as folders or files, the Service Control Manager cannot locate the required folders, and the error message will display.

For more details, please refer to the following article from Microsoft®
<http://support.microsoft.com/kb/812486>

Solution

Rename, move, or delete the offending files or folders.



2.14. Licensing is activated successfully for two instances of PSCAD, but the first instance later becomes deactivated.

Problem

One instance of PSCAD is opened and licensed. When a second instance of PSCAD is opened, licensing is also successful, however, licensing on the first instance becomes de-activated.

The following error message displays in the PscadLmgr.txt file (see Section 2.1 for location of this file):

ERROR: Detected another active Single-User Single Machine licence on this machine. Licencing halted.

Note that the License Manager is not running, PSCAD is self-licensing.

Cause

When using self-licensing, only one instance of PSCAD may be run.

Solution

If your license is a multi-user license with more than one PSCAD seat (e.g. “n” seats), then you may run up to “n” instances of PSCAD as long as the standalone License Manager is installed and running. Instructions for setting up the latest License Manager may be found [here](#).

Or, if your license only has a single PSCAD seat, you may only run a single instance of PSCAD.

For both above solutions, if you convert your license from “lock-based” to “certificate”, there would be no limit to the number of instances of PSCAD that may be run on a machine. A document posted [here](#) provides a comparison of lock-based and certificate licensing. To proceed with this conversion, please contact our Sales Desk (sales@pscad.com).



2.15. Licensing fails when using the standalone License Manager

Problem

When trying to activate a license being managed by the standalone License Manager, licensing fails, and the following error is listed in the `lmgrd-log.txt` file (see Section 2.1 for location of this file):

ERROR: Cannot run multiple instances of `lmgrd-hvdc.exe`

Cause

A process on the machine is running, which is causing a conflict with the License Manager.

Solution

Try closing all instances of the following processes from the Windows “Task Manager” if any are open:

- The License Manager (named “`lmgrd-hvdc`”, listed in the “Services” tab of the Task Manager)
- Windows browsers
- Get Info utility
- Enter License Key utility
- Notepad
- Setup Tool

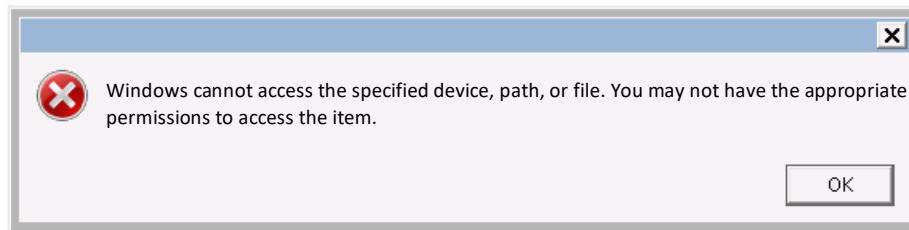
Restart the License Manager from the Windows Start menu (“Restart License Manager Service”).

Retry the licensing.

2.16. Unable to Start or Restart the License Manager

Problem (1)

When trying to start or restart the License Manager from the Windows Start menu (“Start License Manager Service”, Restart License Manager Service”), the following error is displayed:



Cause

Anti-virus software might be quarantining the license manager service, which prevents it from being started or restarted.

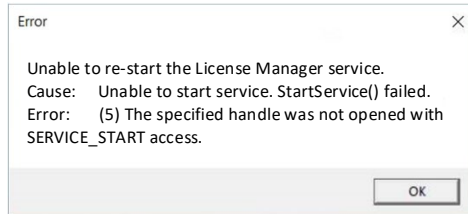
Specifically, an anti-virus software named Cylance has been shown to have quarantined the license manager service in this manner.

Solution

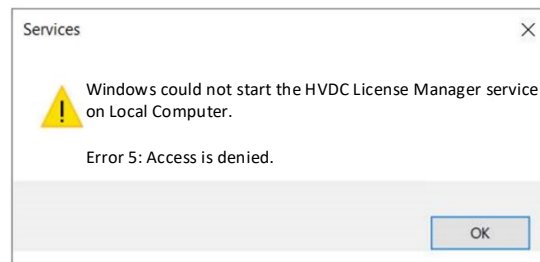
If possible, white-list the license manager service in the anti-virus software.

Problem (2)

When starting the LM manually you encounter the following:



When starting the LM via the Services Control Panel you encounter this:



Cause

The anti-virus software quarantined and removed the LM executable:

C:\Program Files (x86)\HVDC Lmgr\WinNT\lmgrd-hvdc.exe

Solution

Have your IT ensure that the active anti-virus software rules does not determine that the LM executables are malicious or a threat. Additionally, whitelist the LM executables and installation folders if necessary.



2.17. Receiving an “Unable to read license database file” Error Message

Problem

When using the License Update tool to install a license database file, the following message displays in the tool, and the new license file will not install:

```
Database appears to be corrupted. Computed crc: ***** Actual crc: 00000000  
Unable to read license database file
```

Cause

A license database file that is pre-existing on this machine is corrupted. The new license file cannot be installed until the pre-existing license database file is removed.

Solution (1)

Use License Update tool v1.43.1 and later. The latest one is posted to the following link:

<http://updater.pscad.com/utilities/LicenseUpdate.zip>

Download the files from the above link, extract the files to a temporary folder, then run the extracted LicenseUpdate.exe file. From the “Actions” menu, select “Enter license keys”, then browse to the license text file. This tool will over-write the corrupted file with the new license database file.

Solution (2)

For License Update tool v1.36 and later:

- Launch the License Update Tool.
- From the “Actions” menu, select “Delete license databases”, and the pre-existing files will be deleted.
- From the “Actions” menu, select “Enter license keys”, then browse to the license text file. The license database file will be installed.

Solution (3)

For License Update tool 1.28 and later:

- Manually delete the license database files (“lmgr-hvdc”) from the following two locations as applicable:

C:\Windows

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



- Launch the License Update Tool.
- From the “Actions” menu, select “Enter license keys”, then browse to the license text file. The license database file will be installed.

2.18. Licensing issues on Windows 10 Enterprise or Windows 10 Educational Edition

Problem

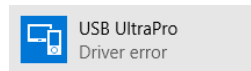
When running on Windows 10 Enterprise Edition, neither PSCAD nor the License Manager can use lock-based licensing when using Sentinel System Driver 7.5.9 while Credential Guard is running.

Cause

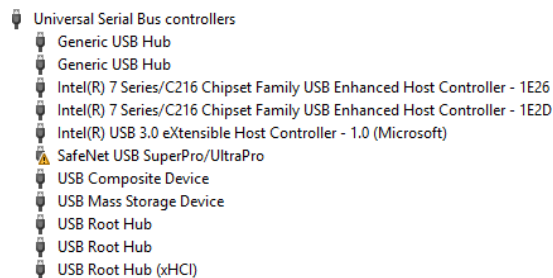
Windows 10 Enterprise with CredentialGuard/SecurityGuard enabled will block the loading of the Sentinel System Driver (version 7.5.9 and earlier), blocking all licensing by the License Manager, and by PSCAD when using self-licensing.

Evidence

1. In Windows Settings | Devices | Connected Devices, the following should be displayed:



2. In the Windows Device Manager, if you browse to the USB devices section, the following should be displayed, which indicates a Sentinel driver issue:



3. When PSCAD is launched, you should not be able to acquire a lock-based license.
4. When the Fortran Medic tool is run (Appendix A.2), if the tool detects that Credential Guard is running, a warning is displayed as shown in Appendix A.5.

Affected PSCAD Versions

- All versions

Affected Windows Platforms

- Windows 10 Enterprise Edition: affected
- Windows 10 Educational Edition: affected
- Windows 10 Professional Edition: not affected



- Windows 10 Home Edition: not affected

Solution (1)

Update your Sentinel Driver to v7.6.0, as this version can run on Windows 10 Enterprise regardless whether Credential Guard is installed:

1. Download the updated Sentinel Driver installer from the following link:
http://updater.pscad.com/utilities/USBDrivers_7.6.0.zip
2. Open the ZIP file, and extract the three files to a temporary folder.
3. Launch the installation in one of the following two methods:
 - Double-click the “Install.bat” file to begin the installation, or
 - Open a Command Prompt with Windows administrator privileges (from the Windows Start menu, browse to and right-click on “Command Prompt”, and select “Run as administrator”) and type in the following:

```
Setup.exe /s /v"/qn ADDLOCAL=USB_Driver,Parallel_Driver CONFIRMUPGRADE=TRUE"
```

4. When prompted to allow the program to make changes to your computer, select “Yes”.
5. When the installation is complete, the command prompt will close.
6. Log out, then log in on the machine.
7. If using a License Manager for PSCAD, ensure that the License Manager is started (from the Windows Start menu, browse to and select “Start License Manager Service”).
8. Launch PSCAD and ensure a license may be activated.

Solution (2)

Continue to use Sentinel Driver 7.5.9 on Windows 10 Enterprise, but remove Credential Guard.

Note

Lock-based licensing does not work at all when Sentinel System Driver 7.5.8 is used on Windows 10 Enterprise Edition.



2.19. Unable to activate a License from the Server

Problem

PSCAD clients are unable to activate a license over the network from the Server.

Cause

ICMP Echo, required for communication between the server and client machines, is being blocked by anti-virus (e.g. McAfee).

Solution (1)

Configure the firewall to allow Echo Requests. For example, to enable this in Windows Firewall, the following are the general steps:

- Launch the Windows Firewall, and select Advanced settings
- Select Inbound Rules, enable Echo Request - ICMPv4-In
- Select Outbound Rules, enable Echo Request – ICMPv4-Out

Solution (2)

Move the License Manager and USB lock and license database file to a machine on which the anti-virus is not running.

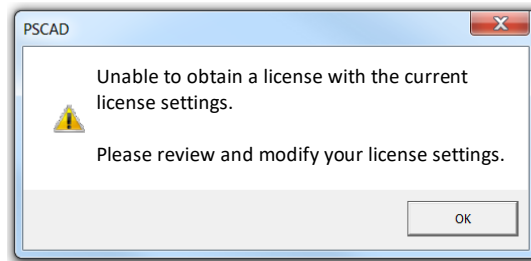
2.20. Receiving Error “USB Error: driver binary not signed by a valid authority, status = 104”

Problem

When trying to activate a license, the following error message displays:



When you click on “OK” on the above dialog box, the following error message then displays:



The following error displays in the “Imgrd-log.txt” file on the machine hosting the License Manager (see Section 2.1 for location of this file):

USB Error: driver binary not signed by a valid authority, status = 104

Cause

There is an issue with the USB driver software, and it should be re-installed.

Solution

- From the Windows Start menu, uninstall the Sentinel Drivers.
- Log off then log back in to the machine (or restart the machine) to fully apply the changes.
- Re-install the Sentinel Drivers. A download and setup instructions are available in the setup manual, which may be displayed from this [webpage](#).
- Restart the License Manager (from the Windows Start menu, browse to “Restart License Manager Service”).



2.21. Receiving a “using an invalid communication protocol: < GNUTELLA” Error Message

Problem

When trying to activate a license, the following messages display in the lmgrd-log.txt file (see Section 2.1 for location of this file):

```
ERROR: System [IP ADDRESS] using an invalid communication protocol: < GNUTELLA CONNECT/0.4
```

Cause

The use of GNUTELLA may block or interfere with PSCAD communications with the License Manager

Solution

The following are two options to resolve this:

- Uninstall GNUTELLA, and do not use this software on your network.
- Or, set the GNUTELLA port to something other than 2053



2.22. Receiving an “Unable to repair corrupted lock [1a]” Error Message

Problem

When trying to activate a license, licensing fails, and the following message displays in the PscadLmgr.txt file (see Section 2.1 for location of this file):

```
ERROR: Unable to repair corrupted lock [1a]:
```

Cause

The cause is due to trying to license PSCAD v4.6.0 or older with a type of license that does not support that version. Specifically, a lock-based license containing additional parallel simulations is only supported with PSCAD v4.6.1 and newer.

Note

This limitation does not exist with certificate licensing, which supports additional parallel simulations with PSCAD v4.5.3 and later.

Solution (1)

Continue to use your lock-based license, but update the PSCAD software to v4.6.1 or newer (contact our sales desk (sales@pscad.com)).

Solution (2)

Continue to use the older version of PSCAD, but convert your license from lock-based licensing to certificate licensing. A comparison of the two licensing types is available here. Contact our sales desk (sales@pscad.com).

Solution (3)

Continue to use your lock-based license and the older version of PSCAD, but install and use License Manager v1.42 or newer, to manage the licensing. A download and setup instructions are here.



2.23. Disabling Ping-before-Connect

Background

Prior to PSCAD contacting and connecting to a License Manager to first obtain a license, it first does a fast ping of the specified LM host. If the ping fails, then the host is not contacted. If the ping passes, then PSCAD attempts to connect to the LM service on the specified host.

This occurs only when PSCAD is configured to use a standalone License Manager, located on the same machine, or on another machine.

Why do we ping before connect? If any of the following is true...

- the host name is misspelled, or
- the named host is offline, or
- the named host does not have a License Manager running on it,

...then attempting three times to connect to the licensing service will result in an approximately 30-second delay as PSCAD attempts to connect to the specified host.

Problem

Some clients' anti-virus or IT policies block all ICMP-based ping requests and ping replies to prevent a Distributed Denial of Service (DDoS) via a ping flood - an avalanche of ping requests, which, if the server responds to all of them, will bring the server down.

Solution

Note

This solution is applicable to PSCAD v4.6.1 and newer.

You can create a registry-based value to disable the ping-before-connect behaviour if required.

Create the following registry value...

Value name:	PingEnabled	
Value type:	REG_SZ	
Value values:	Missing or no value set	Ping is enabled
	Value = {true, yes}	Ping is enabled
	Value = {false, no}	Ping is disabled



...in the following two registry locations (it is recommended to do both):

64-bit PSCAD: HKEY_LOCAL_MACHINE\SOFTWARE\ Manitoba HVDC Research Centre Inc\PSCAD\License
32-bit PSCAD: HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Manitoba HVDC Research Centre Inc\PSCAD\License

Examples

Example of Ping being explicitly enabled:

Computer\HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Manitoba HVDC Research Centre Inc\PSCAD\License

Name	Type	Data
(Default)	REG_SZ	(value not set)
LicenseMode	REG_SZ	4
LmgrHost	REG_SZ	localhost
PingEnabled	REG_SZ	true
Timeout	REG_SZ	1
TimeStamp	REG_SZ	1592320517

Example of Ping being disabled:

Computer\HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Manitoba HVDC Research Centre Inc\PSCAD\License

Name	Type	Data
(Default)	REG_SZ	(value not set)
LicenseMode	REG_SZ	4
LmgrHost	REG_SZ	localhost
PingEnabled	REG_SZ	false
Timeout	REG_SZ	1
TimeStamp	REG_SZ	1592320517

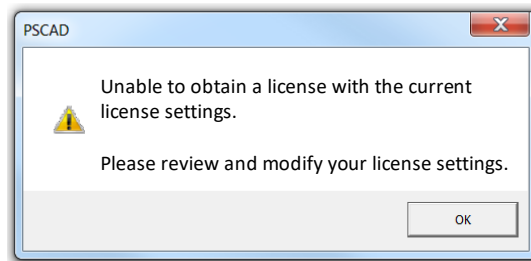
2.24. Receiving an “Unable to obtain a license with the current license settings” Error Message

Problem

When trying to activate a license, the following error message displays:



When you click on “OK” on the above dialog box, the following error message then displays:



Cause

If the following messages are listed in the PscadLmgr.txt file (see Section 2.1 for location of this file):

```
ERROR: Invalid semaphore value  
ERROR: Refused to renew license [No.] for [machine name] for <PSCAD X4 Professional>. License not active.
```

...an unexpected second instance of PSCAD was being licensed. This would occur for licensing that is only programmed to allow a single instance of PSCAD, because the license is a lock-based license with one PSCAD seat.

Solution

Ensure only one instance of PSCAD is running.

Note

This limitation is applicable when trying to license a second instance with lock-based licensing with only one PSCAD seat.

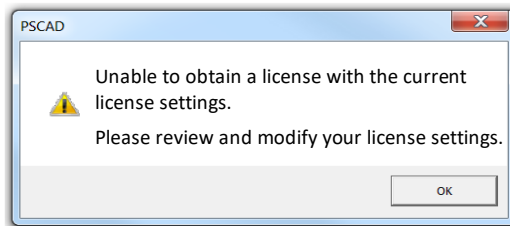
2.25. Receiving an “Unable to obtain a license with the current license settings” Error Message

Problem

When trying to activate for the first time on a client machine, an educational license for PSCAD v4.6.3, and the license is hosted on a server, the following error message displays:



When you click on “OK” on the above dialog box, the following error message then displays:



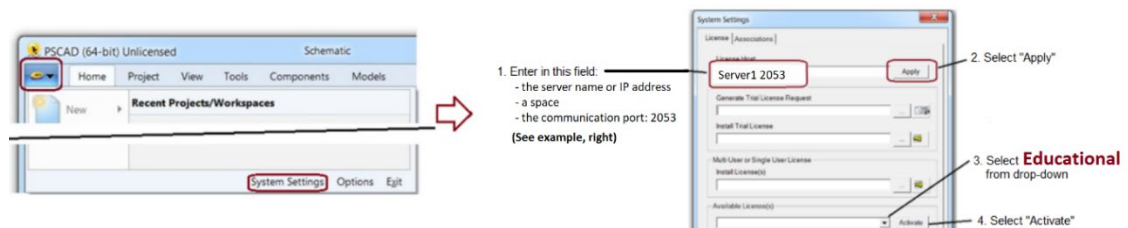
The licensing log file specifies an error related to there not being any professional licenses available.

Cause (1)

Licensing fails because an initial PSCAD v4.6.3 installation by default looks for a Professional license, and will not ask for any available Educational licenses.

Solution (2)

When licensing fails, display the System Settings dialog in PSCAD, and configure as shown:



- Close PSCAD, then restart PSCAD, and try to activate the educational license.



Cause (2)

An Educational-only user created a shortcut to the PSCAD 4.6.3 executable, and did not specify the EDU keyword in the shortcut parameters.

Solution (2)

- Right click on the PSCAD shortcut
- Select the Shortcut tab
- In the Target edit field, after the last ", insert a space, then EDU

Example: "C:\Program Files (x86)\PSCAD463 x64 Testing\bin\win64\Pscad.exe" EDU

2.26. LM 145 – Unable to start on Windows 7 SP 1

Problem

You are unable to:


- Install the License Manager into the Services control panel, and
- Remove (uninstall) the License Manager from the Services control panel, and
- Start or stop the License Manager


Furthermore, rebooting the machine does not resolve the issue.


Evidence

When attempting to install, remove, start or stop the License Manager, you encounter one or more of the following error messages:

Error Installing License Manager as a Service


 Could not install License Manager as a Service
Error: (1072) Specified service already marked for deletion
Note: service may have ALREADY been installed [see Control Panel | Services]
Note: you need administrative privileges to install a service

Unable to remove License Manager from Services Panel 

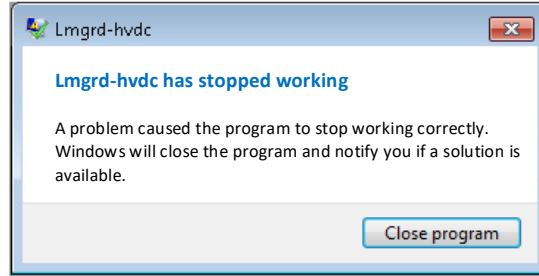
 Unable to remove Imgrd-hvdc as a Service
Error: (1072) Specified service already marked for deletion
Note: you need administrative privileges to remove a service

OK

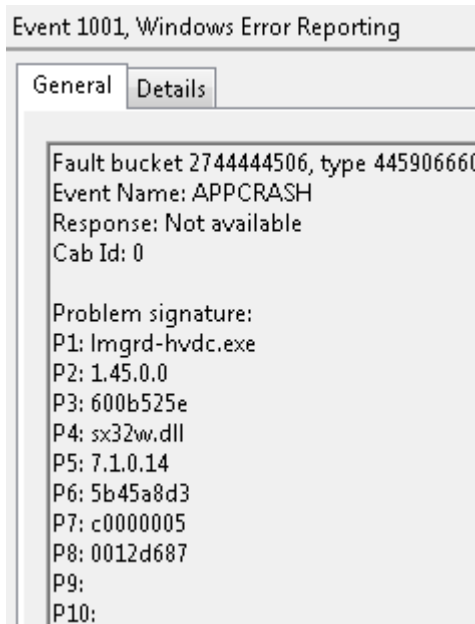
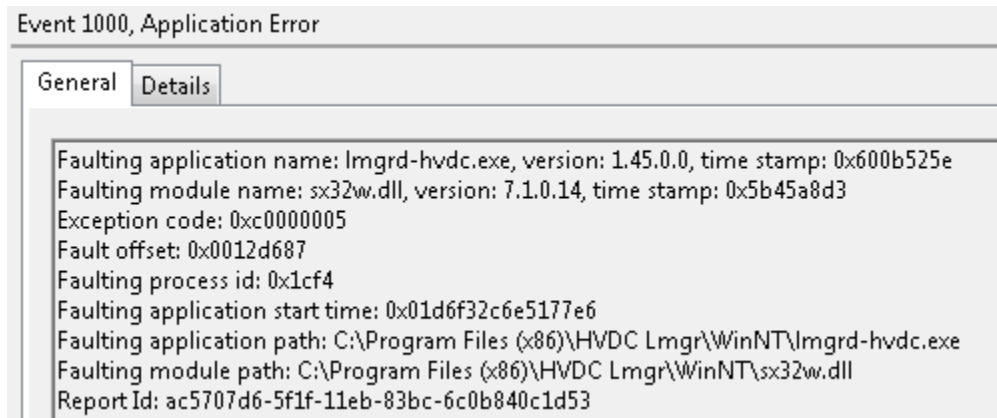
Services 

 Windows could not start the HVDC License Manager service on Local Computer.
Error 1053: The service did not respond to the start or control request in a timely fashion.

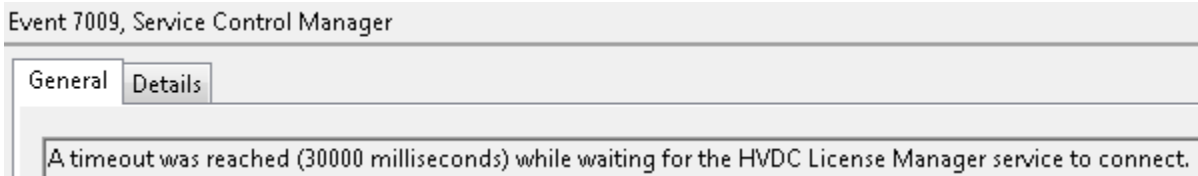
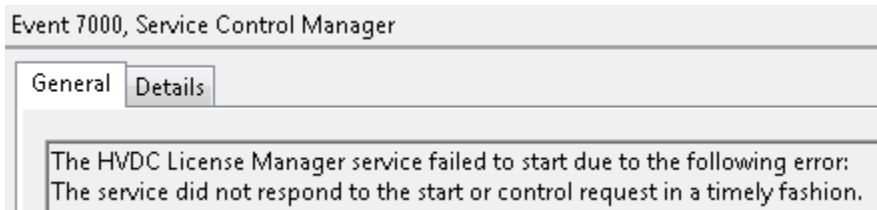
OK



Additionally, the Application Event log may contain events similar to those shown below



Additionally, the System event log may contain events similar to those shown below:








Affected Systems

Some Windows 7 SP1 machines, not all

Solution 1

1. Browse to the following folder:
C:\Program Files (x86)\HVDC Lmgr\WinNT
 - If the above folder contains sx32w (new).dll, then proceed to Solution 2, below.
 - If the above folder only contains sx32w (old).dll and sx32w.dll, as shown below, then resume Steps 2 to 5 of Solution 1.







Name	Date modified	Type	Size
 LMctl.exe	20/09/2020 7:58 A...	Application	338 KB
 Imgrd-hvdc.exe	20/09/2020 8:02 A...	Application	808 KB
 sx32w (old).dll	17/07/2020 9:56 A...	Application extens...	4,566 KB
 sx32w.dll	17/07/2020 9:56 A...	Application extens...	4,325 KB
 WindowsInfo.dll	20/09/2020 8:01 A...	Application extens...	6 KB

2. Rename the sx32w.dll file to sx32w (new).dll.
3. Make a copy the sx32w (old).exe file, and rename that copy to sx32w.dll.
4. Now Start or Restart the License Manager Service from the Windows Start menu.
5. Check the License Manager log file to verify the service is now running. The log file is located here:
C:\ProgramData\Manitoba HVDC Research Centre\LicenseManager\Imgrd-log.txt



Solution 2

1. Browse to the following folder:
C:\Program Files (x86)\HVDC Lmgr\WinNT
2. If the above file contains the files sx32w.dll, sx32w (new).dll, and sx32w (old).dll, as shown below, then perform steps 3 to 6 below.

Name	Date modified	Type	Size
 LMctl.exe	2020-09-20 8:58 AM	Application	338 KB
 lmgrd-hvdc.exe	2020-09-20 9:02 AM	Application	808 KB
 sx32w (new).dll	2020-07-17 10:56 AM	Application extension	4,325 KB
 sx32w (old).dll	2020-07-17 10:56 AM	Application extension	4,566 KB
 sx32w.dll	2020-07-17 10:56 AM	Application extension	4,566 KB
 WindowsInfo.dll	2020-09-20 9:01 AM	Application extension	6 KB

3. Delete the sx32w.dll file.
4. Make a copy the sx32w (old).exe file, and rename that copy to sx32w.dll.
5. Now Start or Restart the License Manager Service from the Windows Start menu.
6. Check the License Manager log file to verify the service is now running. The log file is located here:
C:\ProgramData\Manitoba HVDC Research Centre\LicenseManager\lmgrd-log.txt



2.27. Receiving an “Unable to load the required SuperPro Library” Error Message when Trying to Install or Update a Lock-Based License

Problem

When trying to run the License Update Utility, to install or update a license, the following error message displays:

```
Error: Unable to load the required SuperPro Library (Sx32w.dll)"  
"E0007 -- Cannot load library : .VCRUNTIME140.dll"
```

Cause

Microsoft Visual C++ Redistributables are missing.

Solution

Install the missing software as per this [article](#).



2.28. Receiving an “Client...is not on the license host or on an authorized network” Error Message

Problem

After installing the License Manager (1.42 or better) on a server, when attempting to activate a license on any Client machines, licensing fails, and the following messages are displayed in the Lmgrd-log.txt log file on the server:

Example:

```
License Manager host IPs: 10.100. 10.1
Valid PSCAD client IPs:   Net: 127. 0. 0. 1 Mask: 255.255.255.255 CIDR: /32 Allowed: 127. 0. 0. 1
#hosts: 1
Licensing policy
  Specified: None
  Actual: Localhost
ERROR: Client *** < 10.101.12.13> is not on the license host or on an authorized network.
```

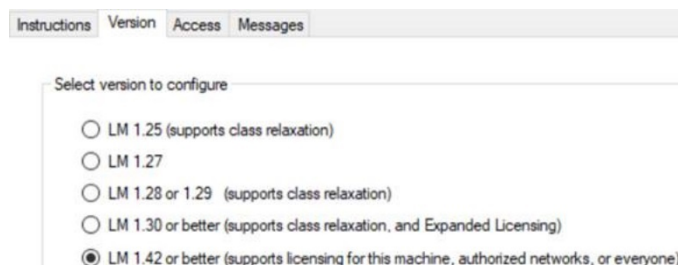
Cause

During the installation of the License Manager, when the Setup Tool was displayed, the user did not select a licensing mode, but saved the settings. As a security precaution, the setting defaulted to licensing “This machine only (private)”, which does not allow sharing with other machines. Therefore, licensing can be activated on the server, but not shared with client machines.

Solution

On the server, configure the Setup Tool for sharing licensing with client machines as follows:

- Launch the Setup Tool utility using one of the following methods:
 - In the Windows *Start* menu, go PSCAD | Setup Tool, or
 - Launch C:\Program Files (x86)\HVDC Lmgr\Common\SetupTool.exe
- When the Setup Tool displays, select the *Version* tab, and ensure that LM 1.42... is selected, as shown:





- Select the *Access* tab.
- Select one of the following:
 - “Everyone (public)”, as shown as selected below, or
 - “Authorized networks (protected)” (not shown as selected), after which you will need to select the *Networks* tab and enter the required information for at least one network or subnet.



- This machine only (private)
- Authorized networks (protected)
- Everyone (public)

- Select Actions | Save Settings and Exit...
- You may need to restart the License Manager for it to load and use the new settings (from the Windows *Start* menu, go “Restart Licence Manager Service”).



2.29. Receiving Error “Cannot run multiple instances of Lmgrd-hvdc.exe” in the Lmgrd-log.txt File

Problem

When a License Manager is installed and running, and the licensing is in place (USB lock and license file), the License Manager does not share licensing. The following error displays in the Lmgrd-log.txt file:

Cannot run multiple instances of Lmgrd-hvdc.exe

Cause

The Get Info Utility was launched and remained open before the License Manager was restarted.

Solution

Close all instances of the Get Info Utility, and restart the License Manager (from the Windows *Start* menu, go “Restart Licence Manager Service”).

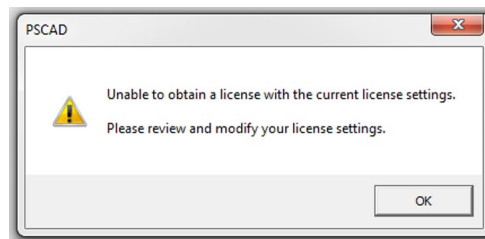
2.30. Unable to Acquire a PSCAD Educational License From a License Manager

Problem

PSCAD X4 is using lock-based licensing, and is configured to connect to a lock-based License Manager which contains only Educational licenses. The first time PSCAD is launched, it will be unable to acquire a license, and will notify the user of that. This can possibly confuse the user into thinking that the licensing does not work, leading to a PSCAD support issue.

Situation 1 – Licensing Fails

- When PSCAD is launched the first time, using either method below, PSCAD does not know whether to request a Professional or Educational license, and will by default request a Professional license.
 - by clicking on a user-created shortcut, or
 - by clicking on the pscad.exe file,
- If the License Manager has only Educational licenses, it will reject the request, and PSCAD will display a prompt informing the user that it cannot obtain a license using the current settings:

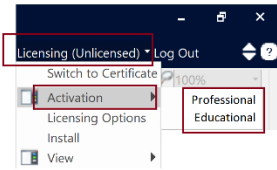


- Click on the "OK" button to close the dialog.

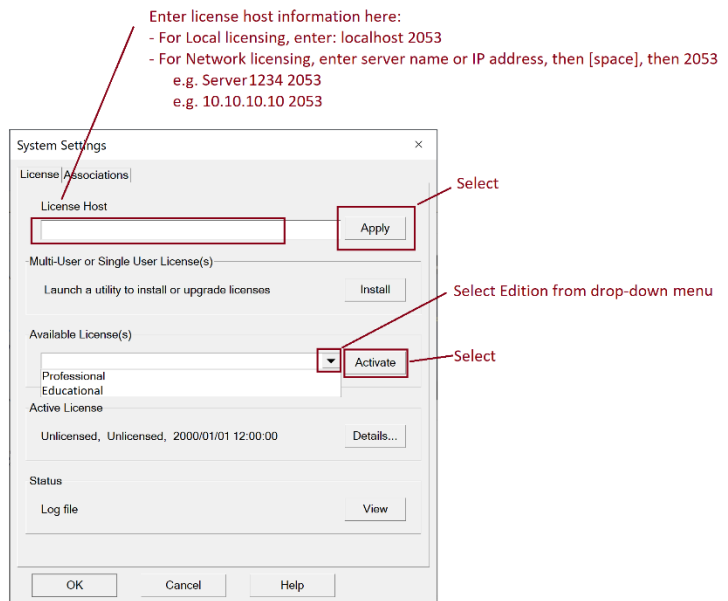
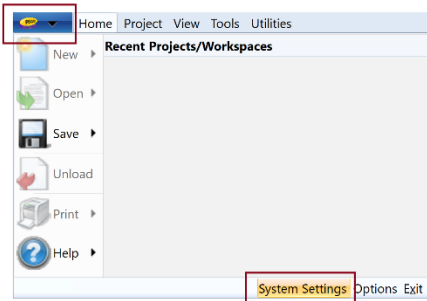
Continued...

- Then, retry to activate a license as shown:

PSCAD V5



PSCAD X4



- PSCAD should acquire the desired edition.
- PSCAD should remember which edition was selected by storing that information in the registry.
- The next time PSCAD is launched, using either of the following methods, PSCAD will check the registry for the Most Recently Used edition, and request that type of license.
 - by clicking on a user-created shortcut, or
 - by clicking on the pscad.exe file

Continued...



Situation 2 – Licensing Works

If the user launches PSCAD

- via an installer created Professional or Educational Edition shortcut, or
- via a user-created shortcut with a Professional or Educational Edition specifier,

then PSCAD will request a license for the specified edition.

So if the user launches PSCAD via a shortcut with has the EDU specifier, and it connects to a License Manager which has only Education licenses, it should be able to acquire and available EDU license.

Solution 1 – Manually Specify the Correct Edition

When PSCAD is launched, a message similar to the following will display:

“Unable to obtain a license with the current settings”

Then the licensing dialog appears.

In the licensing dialog, in the License Host section, enter the license host name or IP address, followed by a space and “2053”, then select the “Apply” button to confirm.

A screenshot of a dialog box titled "License Host". It contains a text input field and an "Apply" button to its right.

Then in *Available Licenses*, select the dropdown icon and select “Educational”:

A screenshot of a dialog box titled "Available License(s)". It features a dropdown menu with "Educational" selected and highlighted in blue. An "Activate" button is located to the right of the dropdown.

Then select the “Activate” button.

You should now get an Educational lock license.

Once PSCAD acquires that, it will remember that, and the next time it is started, it will try to get an Educational license again.

Continued...

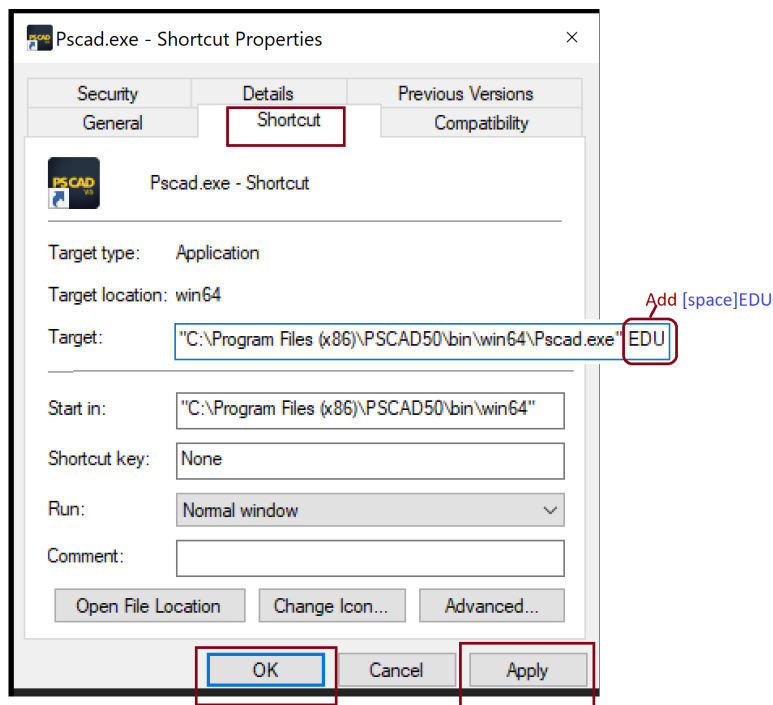
Solution 2 – Use an Installer-Created Shortcut

Launch PSCAD via an installer-created EDU shortcut which can be on the desktop or in the Start Programs | PSCAD shortcut folder.

Solution 3 – Use a User-Created Shortcut

Launch PSCAD via a script-created or user-created shortcut which contains a Professional or Educational Edition specifier. To do that, follow the steps below:

- Create a shortcut to the PSCAD.exe file you want to launch.
For example, for PSCAD v5.0.0, the default path\executable is here:
C:\Program Files (x86)\PSCAD50\bin\win64\Pscad.exe
- Display the Properties of the PSCAD shortcut you created (right click on the PSCAD shortcut and select Properties).
- Select the Shortcut tab.
- In the Target edit field, after the last ", insert a space, then EDU.
For example, for PSCAD V5:



Continued...



Solution 4 – Specify the “MostRecentlyUsed” Edition Registry Value

Create the Most Recently Used edition registry value to the edition that is to be requested, then launch PSCAD with a user or script created shortcut which does NOT specify PRO or EDU. This can be user-created, or script-created.

- Launch Regedit.
- Browse to the following registry key, creating it if it does not exist
HKEY_CURRENT_USER\Software\Manitoba HVDC Research Centre Inc\PSCAD\4.6.3
- Create the following registry value pair as shown below: {MRUEdition, EDU}.
- Launch PSCAD by clicking on the PSCAD.exe file, or by clicking on a shortcut which does not specify the PRO or EDU edition, and PSCAD will attempt to acquire the edition specified by the MRUEdition value.



2.31. PSCAD V5 – Cannot Manually Activate Pro or Edu Lock Licenses From a Remote License Manager

Problem

Under special circumstances, when running PSCAD 4.6.3 Update 4 or Update 5, and configured to get licenses from a lock-based License Manager, it is possible that:

- On PSCAD, you cannot select to activate a Professional or Educational license in the Available License(s) drop down list, but PSCAD does manage to get a Professional license anyways.
- If you have only Educational licenses, then when you use PSCAD as want to select to activate an Educational license, that the Available License(s) drop down list is blank, and you cannot select to use an Educational license.

Affected Versions

- PSCAD 4.6.3 Update 4 (only when using lock-based licensing)
- PSCAD 4.6.3 Update 5 (only when using lock-based licensing)
- PSCAD 5.0.0 (all builds prior to Feb 8, 2021)
- LM 1.45 (all builds prior to Feb 8, 2021)
- All previous versions of License Manager, if used with PSCAD 4.6.3 Update 4 or Update 5

Unaffected Situations

- PSCAD 4.6.3 Update 4 (when using certificate licensing)
- PSCAD 4.6.3 Update 5 (when using certificate licensing)

Solution

Upgrade to the latest License Manager (minimum version 1.46, with a file date of Feb 8, 2021 or later).



2.32. PSCAD Loses its License After 30 to 60 Minutes of Use

Problem

A PSCAD license is checked out from a License Manager, but PSCAD consistently loses the license after about 30 or 60 minutes, even though PSCAD is still open and in use. If someone logs onto the License Manager server and re-starts the License Manager service, then everything works for another 30 or 60 minutes.

Cause

The server is configured to go to sleep or into hibernation after 30 or 60 minutes of inactivity, and when that occurs, the License Manager server no longer services license requests or renewals, and the PSCAD license is consequently lost as it cannot be renewed periodically.

The capability to detect that the server is configured to sleep or hibernate has been added to the latest Fortran Medic utility:

- If the Medic detects all of the following conditions on a computer:
 - Configured to sleep or hibernate in X minutes.
 - Has the License Manager installed.
 - Has a PSCAD lock-based license database file installed and lock plugged in.
- Then the Medic will display the following error (further information available in Appendix A.5, Item 6):

▶ License Manager host is configured to sleep or hibernate

Solution:

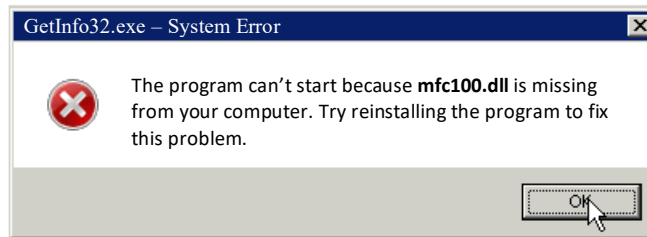
Configure the License Manager host server to never sleep/hibernate. It should always be powered on.

3. Issues with Licensing Diagnostic Tools

3.1. Receiving a “GetInfo32.exe – System Error” Message (Get Info Tool)

Problem (1)

When trying to run the Get Info tool, the following error is displayed, and the Get Info tool will not launch:



Note

If the error specifies a different missing file, “mfc140.dll”, then refer to Problem (2), below.

Cause (1)

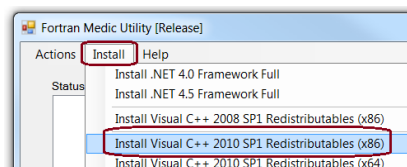
The Get Info tool is unable to launch because of missing pre-requisite software:

Microsoft Visual C++ 2010 Redistributables (x86)

Solution (1)

Install the missing software. For your convenience, this may be installed by using another tool, the Fortran Medic:

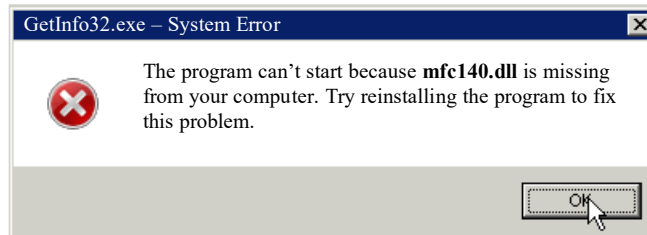
- Download and run the latest Medic as per Appendix A.2, Steps (a) and (b).
- Use the Medic to install the missing software as shown:



- The Get Info tool should now be able to launch.

Problem (2)

When trying to run the Get Info tool, the following error is displayed, and the Get Info tool will not launch:



Note

If the error specifies a different missing file, "mfc100.dll", then refer to Problem (1), above.

Cause (2)

The Get Info is unable to launch because of missing pre-requisite software:

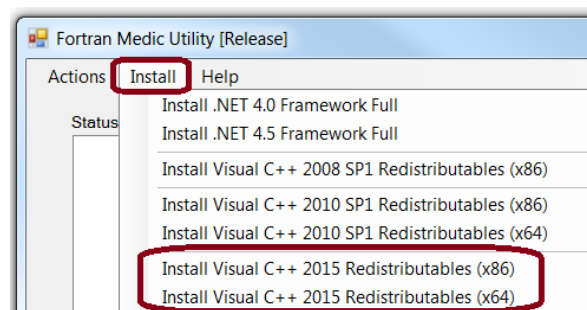
Microsoft Visual C++ 2015 Redistributables (x86)

Microsoft Visual C++ 2015 Redistributables (x64)

Solution (2)

Install the missing software. For your convenience, this may be installed by using another tool, the Fortran Medic:

- Download and run the latest Medic tool as per Appendix A.2, Steps (a) and (b).
- Use the Medic to install the missing software as shown:

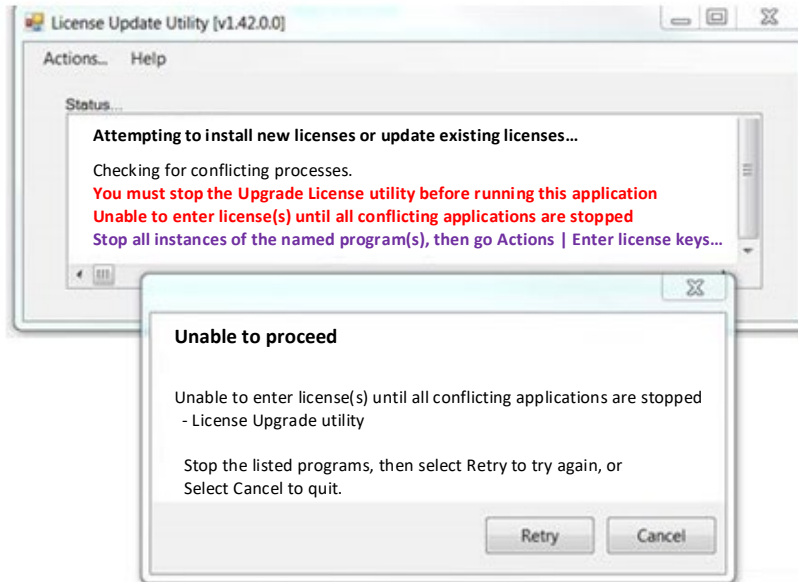


- The Get Info tool should now be able to launch.

3.2. Receiving an “Unable to proceed” error message when using the License Update Utility

Problem

When using the License Update Utility, the following error displays:



Cause

The License Update Utility detects that an older PSCAD tool that is no longer used, called “Upgrade License”, is running in the background. The License Update Utility cannot proceed with this other program running.

Applicability

This error may occur when using the License Update Utility that was released with License Manager v1.42 and earlier.

Solution

- The above error message will not display in the License Update Utility that was released with License Manager v1.43 or later. Update your tool to v1.43 or later (this may be done either by installing the standalone tool or installing the License Manager v1.43 or later. For this software, please contact our support desk (support@pscad.com).
- or
- Display your Windows Task Manager, halt the Upgrade program, then proceed to use the same License Update Utility version.



3.3. Receiving an “Unable to update the lock. Unable to initialize interface due to: Comm error.” Error Message

Problem

When using the License Update Utility, the following error displays:

Unable to update the lock. Unable to initialize interface due to: Comm error

Cause

There may be some sort of group policy that requires that the user have Windows Administrator privileges when any applications are attempting to communicate with the USB drivers.

Solution

Close the License Update Utility, re-launch the License Update Utility with Windows Administrator privileges.



3.4. Receiving an “Unable to update the lock” Error Message

Problem

When using the Fix Lock Utility to downgrade or deactivate a USB lock, the following messages display in the utility:

```
Will attempt to update lock ***_***  
...  
Sentinel USB driver version: <unknown>  
Unable to update the lock. Unable to load 'sx32w.dll'. BadImageFormat: Not compiled for x86. Error: An  
attempt was made to load a program with an incorrect format. (Exception from  
HRESULT...???)  
Version: 7.1.0.14 Length: ***
```

Cause

Sentinel Drivers for communicating with the USB lock are not installed.

Solution

Option 1: Install Sentinel Drivers, then retry running the utility.

Option 2: Run the Fix Lock utility on a machine on which Sentinel Drivers are already installed (e.g. on a PSCAD machine or PSCAD license host machine).



3.5. The Error “Lmgrd-hvdc.exe: none detected” is Displayed in the Get Info Utility

Problem

When the Get Info utility is run to check whether the License Manager is detected (Appendix B.4), the License Manager is not detected:

```
Local License Manager:  
Lmgrd-hvdc.exe:  
None detected
```

Background

The License Manager is only required as specified in Appendix E.1.

Cause 1 – The License Manager is not Installed

The License Manager may not be installed.

This can be checked in either of the following manners:

- Look for the following program in your Windows Control Panel | Add or Remove Programs: *Manitoba HVDC Research Centre Licence Manager [version]*
- Run the Fortran Medic as per Steps a to d of this [article](#), then when the utility has finished detecting your setup, scroll down to the heading “Lock-based Licensing”, and the License Manager status will be displayed. For example:

Lock-based Licensing

```
License Manager (Lock-based)  
Is not installed
```

Solution 1

If the License Manager is not installed, install it as per Appendix E.2.

Cause 2 – The License Manager Executable Might be Quarantined

The License Manager is installed, but the executable file is being quarantined by protection software.

Use the Get Info utility to detect whether the License Manager is in the Exceptions List per Appendix B.4.

Solution 2

Add the License Manager executable file (Lmgrd-hvdc.exe) to the Exceptions List of your protection software.

4. Issues when Licensing PSCAD – Legacy Lockless

4.1. Receiving an "Unable to obtain a license with the current license settings" Error Message

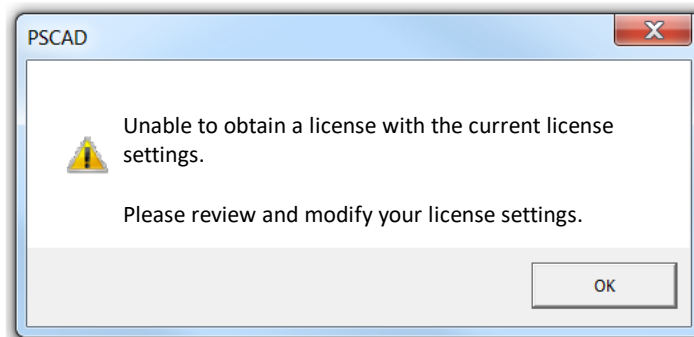
Special Note: Lockless licensing was discontinued as of PSCAD v4.5.4

Problem

When trying to activate a license, the following error message displays:



When you click on "OK" on the above dialog box, the following error message then displays:



Cause 1

If the following error message is listed in the licensing log file, "PscadLmgr.txt":

```
Trial Licence Manager V1.34 starting on Windows 7
Found 1 licence for <Educational v4/x4>
ERROR: Damage after Normal block (#196) at <0x00000000:000>
Installed trial licence for < Educational v4/x4 >. Expires on Mon Jun 01 07:59:59 2015
```

...then in a Lockless Trial License (i.e. v4.2.0 to v4.5.3), licensing is halted because an incorrect time setting on the computer has been detected – the clock has been set back.



Solution 1

Set the clock to the correct time, and forward the following to our Support Desk (support@mhi.ca):

- A brief description of the issue
- Your PscadLmgr.txt file
- The trial.txt file that was provided by our Sales Desk

You will receive a fix lock utility to run to fix your license.

Cause 2

If the following error message is listed in the licensing log file, "PscadLmgr.txt":

```
Machine1 requesting Professional X4
=====
Trial License Manager V1.34 starting on Windows 7
Rejected 1 licence: Cause: Trial licence for <Professional 4> expired on Sat Apr 01 23:59:59 2006
ERROR: No valid trial licenses detected
```

...then the lockless trial license is expired.

Solution 2

Contact our Sales Desk (sales@pscad.com) to purchase PSCAD.

Cause 3

If the following messages are listed in the licensing log file, "PscadLmgr.txt":

```
ERROR: Invalid semaphore value
ERROR: Refused to renew license [No.] for [machine name] for <PSCAD X4 Professional>. License not active.
```

...an unexpected second instance of PSCAD was being licensed. This would occur for licensing that is only programmed to allow a single instance of PSCAD, either because the license is a legacy lock-based license with one PSCAD seat, or it is a legacy lockless trial license).

Solution 3

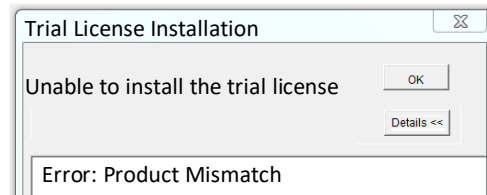
Ensure only one instance of PSCAD is running.

4.2. Receiving an "Error: Product mismatch" Message

Special Note: Lockless licensing was discontinued as of PSCAD v4.5.4

Problem

When attempting to install a lockless trial license for PSCAD v4.2.1, the following message displays:



When running the Medic utility (Appendix A.2), the message as shown in Appendix A.5 Item 5 is displayed.

Cause

The lockless trial licensing requires the Windows ProductID value from the registry.

PSCAD 4.2.1 only looks at the 32-bit registry section for the ProductID value. However, 64-bit versions of Windows store the Windows ProductID in the 64-bit section of the registry, which is not accessible to PSCAD 4.2.1, and therefore the trial installation fails.

Affected Software

PSCAD 4.2.1 running on a 64-bit version of Windows, such as Windows Vista (x64) or Windows 7 (x64).

Note

PSCAD X4 is not affected by this issue.

Solution

The ProductID registry key value should be copied from the 64-bit section of the registry to the 32-bit section of the registry.

The recommended method to perform this is through the Fortran Medic tool, as follows:

- Download and run the latest Fortran Medic tool as per Appendix A.2.
- When the tool has completed its review of your setup, browse down to "Machine Info", right-click on the error message, and select the option to repair the error.

Machine Info

Conflicts

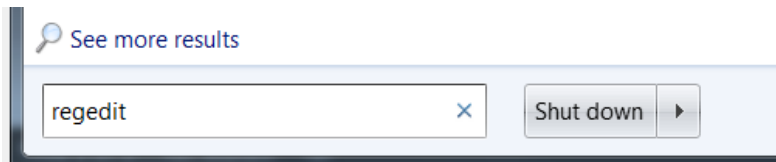
- ▶ You may encounter errors when installing lockless trial licenses.

The other method for copying this registry key is to perform this manually (not recommended). Here are the steps:

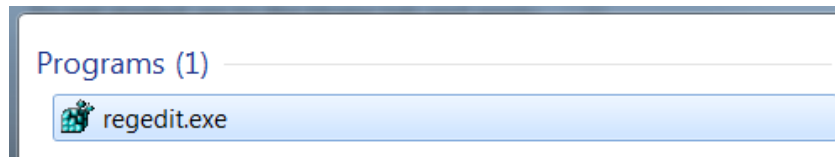
Note

Your organization's IT policy might prohibit this solution, as it involves modification to the Windows Registry Editor. Your IT staff may need to assist with this solution.

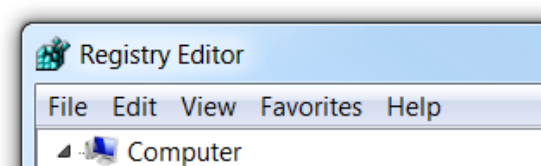
- From the Windows Start menu, type in regedit.exe, as shown below:



- Select regedit.exe from the Windows menu:



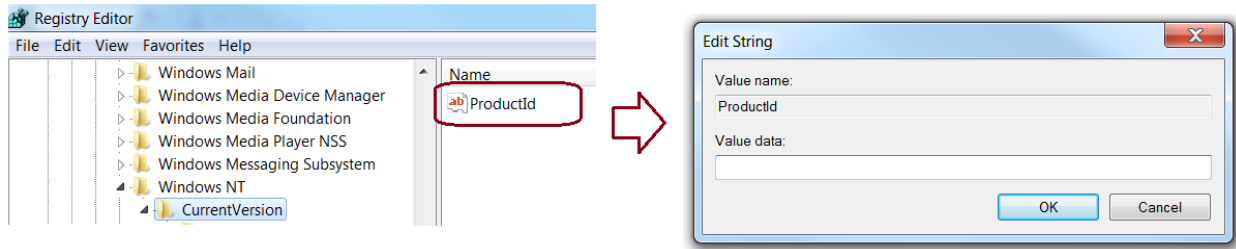
- The Windows Registry Editor will display.



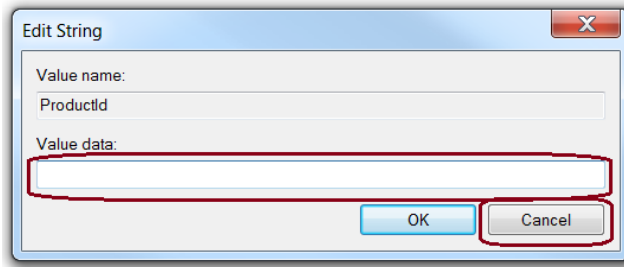
- In the Registry Editor, browse to:

HKEY_LOCAL_MACHINE\Software\Microsoft\Windows NT\CurrentVersion

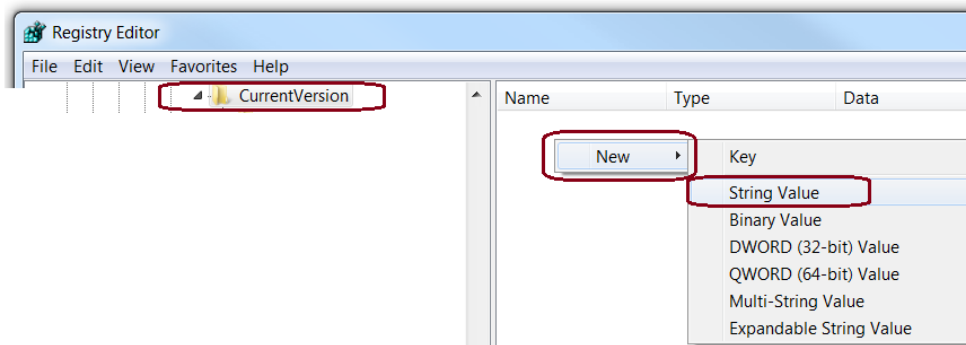
- Double-left-click on the ProductID key, and Edit String will display:



- Copy all of the text from the Value Data field, then select Cancel. Paste this data somewhere temporary (e.g. in a text file).

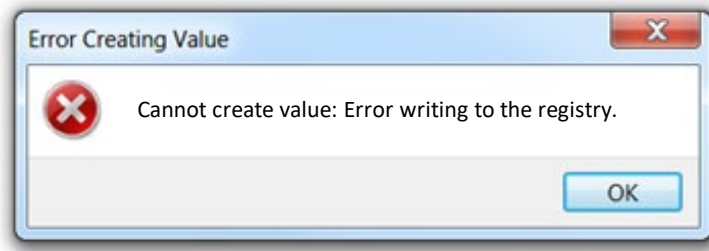


- Browse to HKEY_LOCAL_MACHINE\Software\Wow6432Node\Microsoft\Windows NT\CurrentVersion.
- In the right pane, right-click, select New, then select String Value:

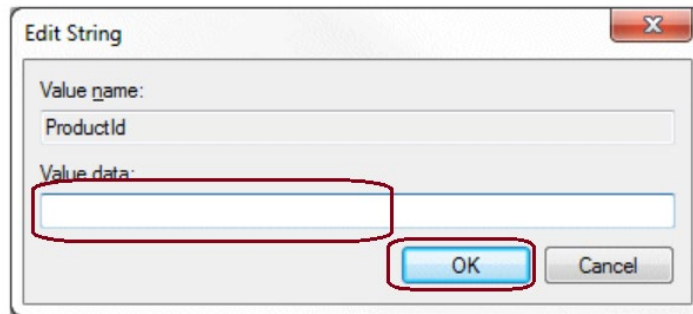


Note

If the following error displays, this type of action has been blocked by IT policy. Please obtain assistance from your IT staff.



- This will create a new registry key called New Value #1 (or something similar).
- Right-click on the new registry key, select Rename, then rename this to ProductID.
- Double-left-click on the new ProductID key, and Edit String will display. In the Value data field, paste in the text that you copied in Step 6, then select OK.



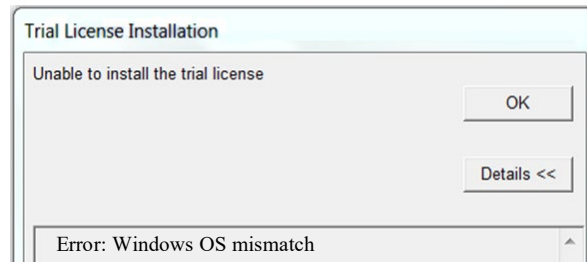
- Close the Windows Registry Editor.

4.3. Receiving a “Windows OS mismatch” Error Message

Special Note: Lockless licensing was discontinued as of PSCAD v4.5.4

Problem

When trying to activate a trial for PSCAD v4.2.1, the following error message displays:



Cause

This error indicates that something on the machine was updated after the PSCAD trial request file was generated.

Note

For a lockless trial, no updates must be performed to the machine.

Solution

Regenerate the trial request file, and submit to the sales desk (sales@pscad.com).



Appendix A Using the Fortran Medic Utility

A.1 Overview

The Fortran Medic utility is our standard mechanism for gathering and displaying information about a user's machine that is relevant to installing, launching, licensing, and running PSCAD (see Appendix A.2).

This utility does not perform any reporting back to us, other than allowing a user to generate a text log file and forward it to our Support Desk to assist with troubleshooting (see Appendix A.3).

This utility does not modify anything on a machine without a user's explicit permission, which is obtained by clicking on the green or red arrows and confirming the recommended action (see Appendix A.4).

Many of the issues that may be detected by the utility are related to software installation and compatibility, integration of Intel Fortran compilers with Microsoft Visual Studio, and protection software preventing PSCAD usage (see Appendix A.5 for some of the more common issues).

A.2 Running the Fortran Medic Utility

The utility may be run as follows:

- a. Download the latest "FortranMedic" from our website:
<http://updater.pscad.com/utilities/FortranMedic.zip>
- b. Unzip the downloaded file, save it to a local drive, and run the unzipped "FortranMedic.exe" file.
- c. When the Medic opens, click on the "Actions" menu and select "Start". The utility will retrieve information about your computer.

A.3 Generating the Log File

The utility log file may be generated as follows:

- a. Run the utility as per Appendix A.2.
- b. Click on the "Actions" menu and select "Save Messages". The FortranMedic message window will display the location of the saved messages text file on your computer.
- c. Send this log file to support@pscad.com, along with any other relevant details.

A.4 Fixing Issues using the Utility

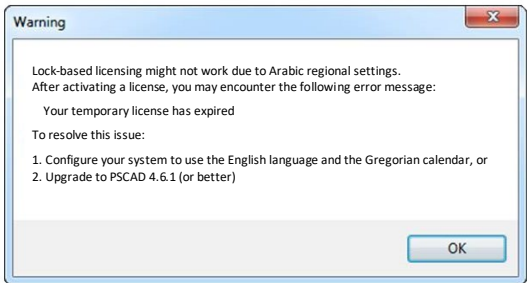
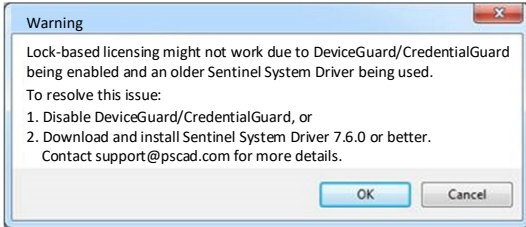
The utility may be used to fix issues as follows:

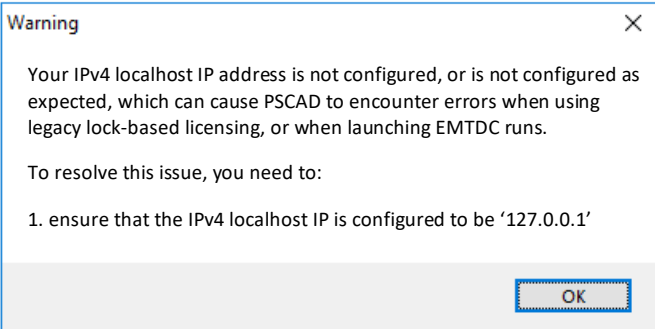
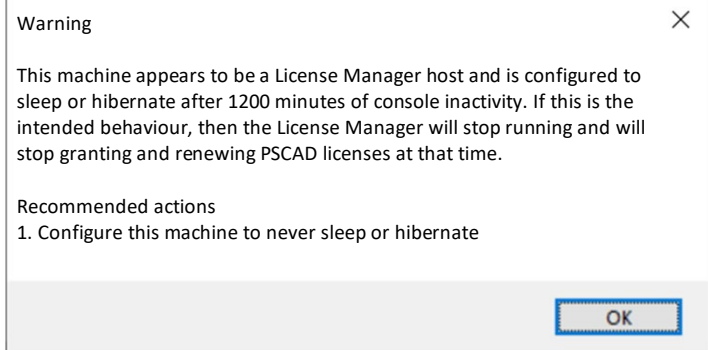
- a. Run the utility as per Appendix A.2.
- b. Right-click on any red arrow to display a menu to fix it.
- c. Right-click on any green arrow to optionally perform additional actions only if instructed by support@pscad.com.

Specific errors within this utility are listed in Appendix A.5.

A.5 Errors Listed in the Utility

The following table lists common errors within the utility along with solutions:

	Error	Solution
1.	<p><i>Content moved to manual "Certificate Licensing Issues" (see Section 1.2)</i></p>	
2.	<p>Lock-based licensing might not work due to Arabic regional settings</p> <p>Double-clicking on this error displays the following dialog box:</p> 	<p>Configure your system to use the English language and the Gregorian calendar. Upgrade to PSCAD 4.6.1 (or better)</p> <p>(See Section 2.10 for more information)</p>
3.	<p>DeviceGuard/CredentialGuard is enabled and may block lock-based licensing</p>	<p>Right-clicking on the message displays the dialog. Select "OK". Refer to Section 2.18 for details.</p> 

<p>4. Network Information</p> <p>...</p> <p>▶ Your IPv4 localhost IP address is not configured as expected</p>	<p>Right-clicking on this conflict results in a dialog similar to the following. Configure your machine as directed.</p> <div>  </div> <p>PSCAD expects that a machine's localhost is configured to the standard "127.0.0.1". If a machine's localhost is not configured, or configured to something else, then PSCAD might have issues when using lock-based licensing, and when launching/connecting to EMTDC instances.</p>
<p>5. Machine Info</p> <p>Conflicts</p> <p>▶ You may encounter errors when installing lockless trial licenses.</p>	<p>This issue is only relevant if you will be installing a PSCAD v4.2.1 lockless trial license on a Windows 64-bit edition. Refer to Section 4.2 for details.</p>
<p>6. Machine Info</p> <p>...</p> <p>Sleep Hibernate</p> <p>Conflicts</p> <p>▶ License Manager is configured to sleep or hibernate.</p>	<p>If the error in the left cell displays, right-clicking on the error will display the following message:</p> <div>  </div> <p>The PSCAD lock-based license server host should not be allowed to ever sleep/hibernate. If it is allowed this, then PSCAD client machines might be able to wake up the server to activate a lock-based license, but they will lose their license when the server sleeps/hibernates. This is because the licensing requires constant communication between the License Manager on the server and PSCAD on the client machine; this communication will be lost when the server sleeps/hibernates.</p> <p>Alternatively, if it is detected that the License Manager host is properly configured to never sleep or hibernate, then the Fortran Medic will display the following: Sleep, Hibernate: Never</p> <p>Refer to Section 2.32 for further details.</p>

Appendix B Using the Get Info Utility

B.1 Overview

The Get Info utility is used to detect system parameters for troubleshooting licensing issues. Some of the more important parameters include software and license installation, operating system, and user level.

This information is gathered and displayed in the utility, as well as saved to a file which may then be forwarded to our Support Desk to assist with troubleshooting.

Section 2.5 lists some of the common issues that are identified using this utility.

B.2 Running the Get Info Utility

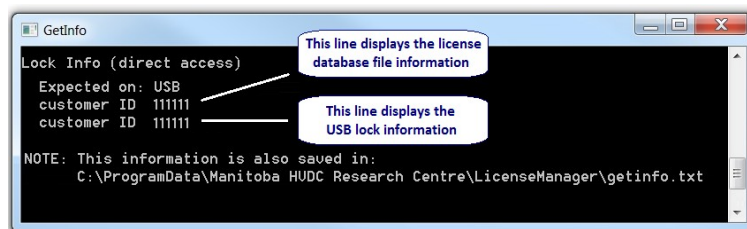
The Get Info utility may be run as follows

- Ensure the PSCAD USB lock is plugged in (if applicable).
- Download “GetInfo32.zip” from the following link:
<http://updater.pscad.com/utilities/GetInfo32.zip>
- In the downloaded folder, open “GetInfo32.exe”.
- When prompted whether to test shortcuts, select “No”.
- The Get Info utility will gather information about your system and display it.

B.3 Using the Utility to Detect Licensing

The Get Info utility may be used to detect the license number associated with a USB lock and license database file installed on a machine. Proceed as follows:

- Run the utility as per Appendix B.2.
- Ensure the USB lock is securely plugged in (if applicable).
- Once the utility has finished running, scroll down to “Lock Info (direct access)”. If detected, the licensing information related to the license database file and/or USB lock will be displayed.



The screenshot shows a window titled "GetInfo" with a black background and white text. The text displays the following information:

```
Lock Info (direct access)
Expected on: USB
customer ID 111111
customer ID 111111
```

Two callout boxes with white backgrounds and black text are overlaid on the screenshot:

- The first callout box points to the line "customer ID 111111" and contains the text: "This line displays the license database file information".
- The second callout box points to the line "customer ID 111111" and contains the text: "This line displays the USB lock information".

At the bottom of the window, there is a note:

```
NOTE: This information is also saved in:
C:\ProgramData\Manitoba HUDC Research Centre\LicenseManager\getinfo.txt
```



B.4 Using the Utility to Detect the License Manager

The Get Info utility may be used to indicate whether the License Manager is detected. The License Manager is only required as specified in Appendix E.1.

Proceed as follows:

- Run the utility as per Appendix B.2.
- Once the utility has finished running, scroll down to “License Manager...” and check whether it is in the Exceptions list of your protection software:
 - The License Manager is required to be in your protection software Exceptions List.
 - If the license manager is not in the Exceptions list, the following messages will display:

```
Licence Manager...
Status:           not in exceptions list.
CAUTION:         for the License Manager to work on this machine...
                  1.  the Firewall must be OFF, or
                  2.  the License Manager must be in the Exceptions list
```

- Then, scroll down to “Local License Manager”, and see whether the License Manager executable file is detected:
 - If the executable file is detected, the license manager version will be displayed. For example:

```
Local License Manager:
  Lmgrd-hvdc.exe:
    1.45, installed
```

- If the executable file is not detected, an error will display:

```
Local License Manager:
  Lmgrd-hvdc.exe:
    None detected
```

Refer to Section 3.5 to troubleshoot issues with detecting the License Manager using the Get Info utility.



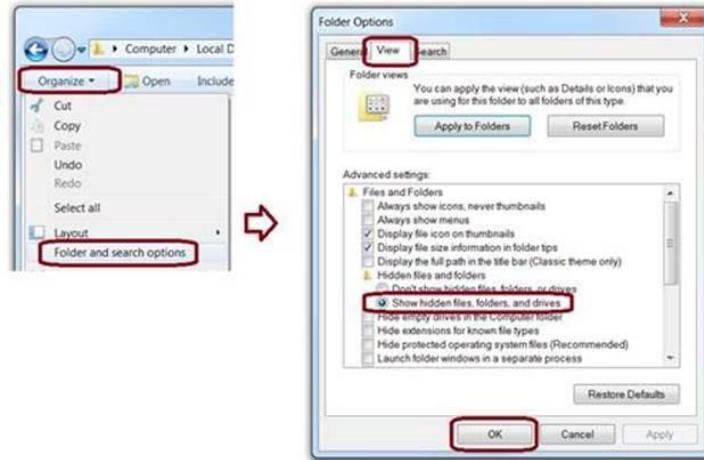
Appendix C Requirements for Network Licensing

The following are requirements when using the Standalone License Manager:

- On the license host server, Ping Echo and Ping Reply must be enabled on the Firewall.
- The protocol for communication between the server and clients is UDP/IP on port 2053 and 2054.
- The License Manager must be installed on the server.
- The License Manager executable file (Lmgrd-hvdc.exe) must be in the Exceptions list of your protection software.
- The license database file must be installed on the server.
- The Sentinel USB lock must be plugged in on the server.
- PSCAD client machines must be able to send out ping requests and receive ping replies.

Appendix D How to display a Hidden Folder

In many issues in this document, and as listed in Section 2.1, there are references to a folder that may be hidden, called appdata. If this folder is hidden, it may be displayed as shown:





Appendix E The PSCAD License Manager

E.1 Overview

The license manager is required when one or both of the following two conditions are present:

- Licensing will be hosted on a server and shared with PSCAD client machines over the Network/Internet,

and/or
- The license is hosted on a server or client machine, AND has more than one PSCAD seat.

Further information on the License Manager is available in this [topic](#).

E.2 Setup

A download and setup instructions are available in this [article](#).



DOCUMENT TRACKING

Rev.	Description	Date
0	Initial – Content from the Resolving Issues document : Moved content over as: Sections 2 and 3, Appendix A.5 Items 1 to 3, and Appendix C Copied content over as: Appendix A.1 to A.4, Appendix A.5 Item 4, and Appendices B and D	18/Jun/2020
1	Updated to new document template	03/Jul/2020
2	New Section 2.1 (re-numbered Sections 2.1-2.23 to 2.2-2.24) Updates to Sections 2.3, 2.4 and 2.23	21/Jul/2020
3	Added Problem2 to Section 2.16	24/Sep/2020
4	Added new Section 4 and Appendix A.5 Item 5 (moved over from Resolving PSCAD issues document); Deleted Appendix A.5 Item 1; Applicable to Resolving Certificate Licensing issues document	13/Oct/2020
5	Added Solution 3 to Section 2.22; Added Section 2.25	29/Oct/2020
6	Update to Section 2.25 Solution 1 and addition of Solution 2	06/Jan/2021
7	New Section 2.26	25/Jan/2021
8	New Sections 2.27, 2.28, 2.29, 2.30, 2.31, 2.32 and 3.5 New Appendices B.4 and E New Item 6 added to Appendix A.5 Update to Appendix C	09/Oct/2021