PSCAD – Best Certificate Licensing Practices for High Performance Centres

1.1. Introduction

There are several configuration changes you can make which will reduce PSCAD's startup and exit latencies, which can be crucial when using PSCAD in high performance computing centres, and especially when automation is used to launch PSCAD hundreds or thousands of times to execute batches of simulations.

1.2. Practices

Step 1 - Optimize the Certificate Licensing Settings

Recommended Action	Advantage(s)
In the PSCAD application, when logging in to MyCentre, ensure to select to "Remember me" on the login page	The user's MyCentre credentials will be encrypted and saved in shared memory for as long as the computer is powered up, and do not need to be provided again manually, or in automation scripting. This allows PSCAD to acquire and return certificates if so desired or required, while protecting the credentials from exposure.
Get a license certificate before running PSCAD	If you acquire and save a license certificate before using PSCAD to process a batch of simulations, then PSCAD will not need to get a certificate each time it starts up.
Use a single virtual user account and MyCentre user account, both to be used by all users on that machine	To avoid having multiple users log in and each consume a license certificate: 1) Create a single Windows User for all users to log in on the high performance machine, and 2) Create a single MyCentre user account attached to the licensing that all users would use for logging in to PSCAD. Then only a single certificate is consumed on that machine.
Don't prompt on 'log out'	Since we recommend that the active user log in once and stay logged in, this setting is not relevant, and can be set to False.
	(see "Retain the license certificate on exit", in below row.
Don't automatically renew the certificate on startup	This reduces PSCAD's startup time by not having to try to contact the Certificate License Manager to renew the certificate on startup. If this is enabled, then PSCAD will try on every launch of PSCAD to renew the certificate until it successfully does so once a day. If PSCAD cannot contact the server due to IT firewall rules, it will waste time on every startup trying to do so.
	It should be noted, that in this situation, you will need to manually, or using automation, allow PSCAD to renew its license certificate at least once every 28 days, so that the certificate does not expire on the machine.
If using a PSCAD V5 license to run X4, set V5 to allow X4 to use the certificate (setting only available in PSCAD v5)	See this article for more information on this setting.
Retain the license certificate on exit	This reduces PSCAD's shutdown time by not having to return the certificate on exit
	Allows you to run multiple simultaneous instances of PSCAD. If you return the certificate on exit, then when the first instance of PSCAD exits, the remaining active instances of PSCAD will lose their license.
Ignore errors if unable to return certificate on exit	Since we recommend retaining the certificate when PSCAD exits, there is no need to warn on any errors when attempting to return the certificate, because it won't be returned.

Recommended PSCAD 4.6.3 settings:

Prompt	
Notify me when the license certificate will expire	Never
Prompt on 'Log Out'	False
Startup Behaviour	
Licensing Service	Certificate licensing (internet) *new*
Certificate behaviour	Do not renew
Termination Behaviour	
Certificate behaviour	Retain certificate
Unable to return a certificate on exit	Ignore

Recommended PSCAD 5.0.0 settings:

Prompt	
Notify on expiry	Never
Prompt on 'Log Out'	False
Startup Behaviour	
Certificate behaviour	Do not renew
Allow certificates to be used by PSCAD x4	Enable
Termination Behaviour	
Certificate behaviour	Retain certificate
Unable to return a certificate on exit	Ignore

Step 2 - Disable the Start Page

This is not a licensing setting, but it will affect the PSCAD startup time, especially if access to the PSCAD Start Page URL is blocked or delayed by anti-virus processing, and that can become a significant factor if you are using automation to

- launch and run many sequential instances of PSCAD

- launch and run multiple concurrent instances of PSCAD

For PSCAD v5, select *Workspace | Session | Start Page*, then select *Hide*

For PSCAD x4, select *Options | New Session | Start Page*, then select *Hide*

Step 3 - Get a License Certificate

If you are manually launching PSCAD multiple times, launch PSCAD, log into MyCentre (select *Remember me on the login page)*, select the most appropriate license certificate for the simulations to be performed, then perform Step 1 and Step 2 above.

If you will be using automation to launch and control PSCAD, then:

- Launch PSCAD as per the links below, and it should automatically acquire a license:

  - For v4.6.3: https://www.pscad.com/webhelp/al-help/quick_start.html#launch-run-pscad
  - For v5.0: https://www.pscad.com/webhelp-v5-al/quick_start.html#launch-run-pscad

1.3.   Additional Considerations

For additional configuration considerations, please refer to the following documents:

•   PSCAD – Best Certificate Licensing Practices

•   PSCAD – Best Lock-based Licensing Practices

1.4.   Further Help

We hope this information was helpful. If you have any questions, please contact support@mhi.ca.

DOCUMENT TRACKING

Rev.	Description	Date
0	Initial	30/Sep/2021