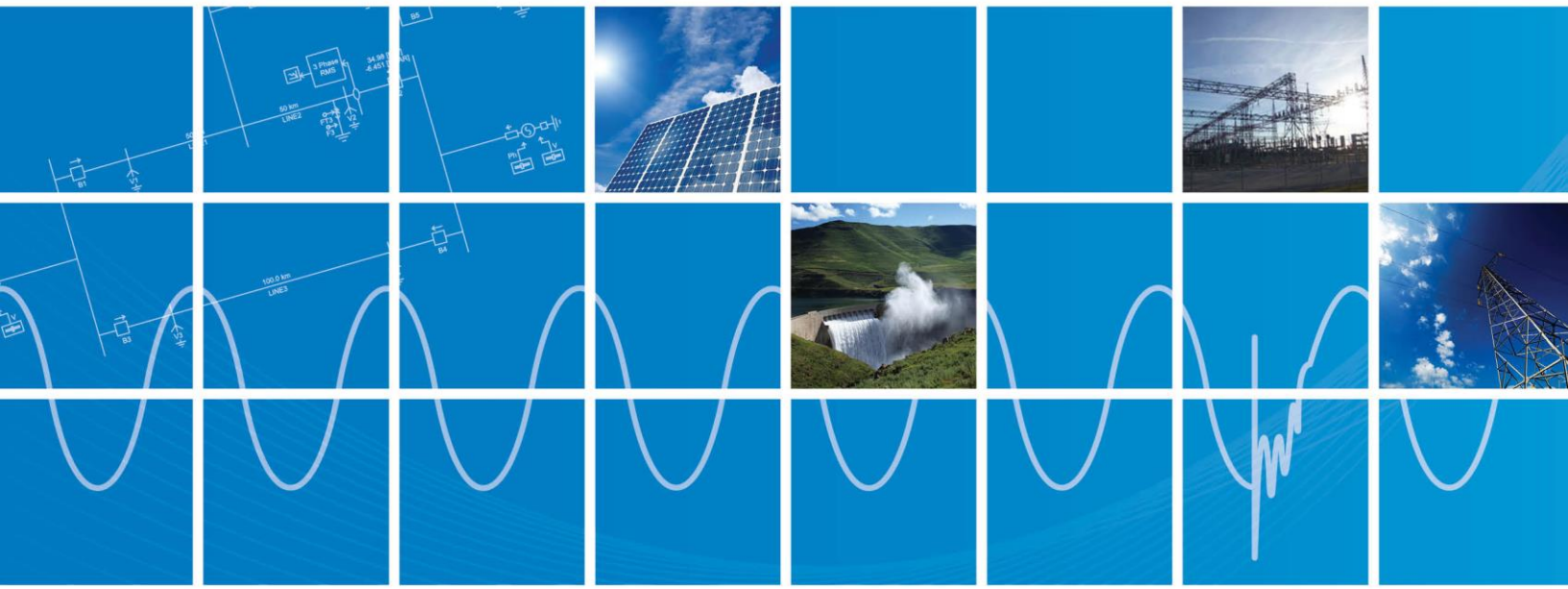
What's New in PSCAD v4.6.2

(*since v4.6.1*)

Written for PSCAD™ X4 version 4.6.2

May 11, 2017



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PSCAD

Deficiency Fixes:

1. **Parallel Simulations**: The default maximum number of parallel simulations that may be launched simultaneously has been increased from 4 to 8. This new base amount is included with all professional and educational licenses. As of this release, legacy (hardware lock-based) licensing has also been updated to accommodate this new default.

2. **Automation Library**: The automation library has been updated with new features.

   The Automation Library allows users to manage PSCAD activities using custom made Python scripts. It includes commands to launch the software, load and run simulations, change parameters, and analyse data. This unlicensed, standalone software is supported with PSCAD v4.6.1 and later. For more information, please refer to the online *PSCAD Knowledge Base*, under *PSCAD Automation with Python Scripting* (https://hvdc.ca/knowledge-base/topic:242/v:).

Bug Fixes:

1. Added emphasis in error message to check associated log file when a transmission line solve failure occurs (#6339).
2. PSCAD no longer unstable when a sticky note object does not possess a parameter support XML (paramlist) (#6349)
3. Choice list parameters, containing a negative integer option, no longer become corrupt upon modification (#6363).
4. Values modified within the scenario viewer now once again dynamically change values on the canvas (#6378).
5. Blackbox now detects text parameters, potentially used as inputs to pass signal names into component script. This situation can cause issues with component ordering if left unchecked (#6376).
6. The component graphics canvas now defaults to a single size (Oversize) for all components, rather than defaulting to a C-size, with the option to increase to Oversize (i.e. Smaller/Larger) (#6396).
7. **PSCAD no longer crashes if a project is built, the source of a signal (say a component) is deleted, and the mouse is hovered over the signal wire (#6391).**
8. Overflow and underflow on graph y-axis limits are now handled properly. Additional SI units have been added to handle larger and smaller numbers. Extremely large or small numbers are formatted using exponential notation (#6362).
9. Text labels no longer appear with the wrong colour if the order in which new, coloured graphic objects are in a specific order (#6410).
10. PSCAD now detects missing foreign ends on t-lines set as foreign (#6397).

11. A 'server busy' message no longer appears when user attempts to run a simulation on a windows install that does not give PSCAD fully-trusted authority (#6458).
12. Dimension mismatches involving ground-type electrical nodes are now properly detected by the compiler (#6400).
13. Cutting a graph from a graph panel using the ctrl + x hotkey, or from the cut button in the ribbon, now performs the correct action (#6446).
14. A performance issue, with regards to switch views between the graphics and parameters sections of the definition editor, has been fixed. If a component definition contained a very large parameters and/or graphics section, switching views could take several seconds. Inefficient code was removed and the delay removed (#6468).
15. An obscure issue with regards to failing to detect a signal source contention, dependent on orientation of a wire, has been fixed (#6480).
16. The schematic compiler was failing to detect an xnode and a data label, which shared the same name. This was specific to the situation where the data label was attached to a data array tap (#6365).
17. The canvas settings virtual wires filter now initializes properly for a new session, when the project is built. Previously, the filter was initialised solely on access of the canvas settings dialog, and would remain so for that current session only (#6485).
18. Custom (non-master library) components are now included when exporting a definition with dependents to a *.psdx file (#6261).
19. **PSCAD will no longer crash if a node search is performed on an invalid node (#6496).**
20. PSCAD now checks to ensure underground cables and aerial lines are not mixed within the same mutually couple right-of-way (#6498).
21. A time/date stamp has been added to the About PSCAD dialog box (#6388).
22. Ground-type connection nodes no longer issue an isolated node warning message, when not isolated (#6488).
23. Node search will now function properly if the project being searched is flagged as modified (#6495).
24. Negative signs now properly appear on y-axis graph labels, when the label display becomes large (#6518).
25. An invisible boundary no longer occurs along the bottom and/or right edge of the schematic canvas, when adding components from the ribbon bar (#6514).
26. File reference components may now be added to (and used within) layers (#6474).
27. **Copying and pasting a component between projects no longer causes a crash when the 'Cut/Copy/Paste keys' application option is set to 'x,c,v' (#6520).**
28. The last three data points of a monitored signal are now properly plotted and viewable on graphs (without the need to zoom in) (#6398).
29. **PSCAD no longer crashes if the 'Simulations' node is missing from the associated xml document (#6542).**
30. Drag and drop of curves now works properly on xy plot panels (#6512).
31. **The mechanism for saving graph settings in PSCAD has been completely overhauled and now works properly, including when using multiple instance modules with multiple calls (#6434).**

32. **The 'Edit Parametrers…' and 'View Properties…' menu items on the schematic canvas context (right-click) menu now function properly (#6537).**
33. **The PSCAD title bar no longer becomes non-functional (transparent with no display or min/max buttons). The Windows Desktop Manager could act up when, for example, restoring a remote desktop, or when switching logins in Windows 7. This issue also occurred when running PSCAD within Windows 10 (#6033/#4589).**
34. **PSCAD no longer crashes if library project is unloaded while editing a component definition that resides in that library (#6547).**
35. The parameter editor now displays properly when the windows font size is not set to normal (100%) (#6538).
36. **PSCAD no longer crashes after reversion of the reference of a single component, following a project-wide re-mapping of references (#6575).**

EMTDC

Bug Fixes:

1. The ideal current calculation now provides the correct result for the specific situation when chatter detection is enabled, and chatter is detected in another subsystem (#6368).
2. Added a check to stop the simulation if the number of time steps needed for the duration of the run reaches an integer overflow. If left unchecked, the simulation could stop at an unexpected time (#6558).

Master Library

Bug Fixes:

1. Core saturation in 3-phase transformers, when configured as delta lead, now provides the correct result. Note that delta leading was incorrectly using the lagging sequence in its calculation (#6359).
2. A warning is now issued if a transformer component is not set to ideal when saturation is enabled (#6283).
3. The copper loss calculation in the 3-winding, classical transformers (both 1-phase and 3-phase), is no longer off by a factor of 2 (i.e. models showed half the losses as expected) (#6382).
4. **The three-phase voltage source model (*source3*) no longer gives two different results when the source impedance type is set to *L*, and the impedance data is toggled between *RRL Values* and *Impedance* formats (#6479).**
5. The File Read component now verifies that the number of columns in the file it is reading matches the number of columns specified in the component (#6467).
6. The two-winding transformer graphic now properly displays the winding voltages, when the component is flipped (#6385).
7. Multi-meter component parameter dialog is not properly named (#6499).

8. The sampler component no longer shows a drift when sampling is based on frequency (#6505).
9. The binary delay component now works correctly when the delay is set to 0.0 (#6503).
10. Fixed the Three Phase Voltage Source Model 2 component description and display of the series-parallel RRL impedance type to be consistently R-R//L (#6453).
11. **The calculation of the internal resistance during discharge mode in the Battery component has been corrected (#6595).**
12. **The FDNE component now properly calculates the conductance matrix when negative conductance branches are present (#6563).**

Licensing and Utilities

Bug Fixes:

1. License Manager Setup Tool was incorrectly set to configure older versions of the License Manager (Hot Fix #1) (#6477).
2. PSCAD issues a warning if the machine is configured for FIPS-compliance, as it will prevent PSCAD from saving the license certificate (#6476).
3. Server Busy appears when PSCAD runs on some machines. (Hot Fix #2) (#6458).
4. Changed wording in tabs of the License Setup tool (#6450).
5. Add option to show a warning when an automatic certificate return fails (#6502).