

IC-CAP 2020 Update 2.0

PathWave Device Modeling (IC-CAP) 2020 Update 2.1 Release Notes

Notices

© Keysight Technologies Incorporated, 2002-2020

1400 Fountaingrove Pkwy., Santa Rosa, CA 95403-1738, United States All rights reserved.

No part of this documentation may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Keysight Technologies, Inc. as governed by United States and international copyright laws.

Restricted Rights Legend

If software is for use in the performance of a U.S. Government prime contract or subcontract, Software is delivered and licensed as "Commercial computer software" as defined in DFAR 252.227-7014 (June 1995), or as a "commercial item" as defined in FAR 2.101(a) or as "Restricted computer software" as defined in FAR 52.227-19 (June 1987) or any equivalent agency regulation or contract clause.

Use, duplication or disclosure of Software is subject to Keysight Technologies' standard commercial license terms, and non-DOD Departments and Agencies of the U.S. Government will receive no greater than Restricted Rights as defined in FAR 52.227-19(c)(1-2) (June 1987). U.S. Government users will receive no greater than Limited Rights as defined in FAR 52.227-14 (June 1987) or DFAR 252.227-7015 (b)(2) (November 1995), as applicable in any technical data.

Portions of this software are licensed by third parties including open source terms and conditions.

For detailed information on third party licenses, see [Notice](#).

Contents

PathWave Device Modeling (IC-CAP) 2020 Update 2.1 Release Notes	4
What's New	4
Enhancements	4
Changes	4
Issues Fixed	5
Installation	5
Licensing	6
Documentation	6
Known Issues	7
Documentation	10
Simulation	10
Installation	11
Licensing - Known Issues	13

PathWave Device Modeling (IC-CAP) 2020 Update 2.1 Release Notes

PathWave Device Modeling (IC-CAP) is the industry standard platform for DC and High Frequency measurement and modeling of semiconductor devices. For general information about PathWave Device Modeling (IC-CAP), refer to the [Keysight EEsof product](#) page.

This document describes new features, functionality, fixed issues and known issues in PathWave Device Modeling (IC-CAP) 2020. It also includes documentation changes and provides workarounds for defects wherever possible.

For more information on known issues in PathWave Device Modeling (IC-CAP) 2020 Update 2.1, or to report a new issue, refer to the [Keysight EEsof Knowledge Center](#).

To download PathWave Device Modeling (IC-CAP) 2020 Update 2.1, visit the [Keysight EEsof Knowledge Center](#) website.

- To install PathWave Device Modeling (IC-CAP) 2020 Update 2.1 in minimal steps, refer to [IC-CAP Quick Install and License Setup](#).
- To install licenses for PathWave Device Modeling (IC-CAP) 2020 Update 2.1 through IC-CAP 2020 Update 2.1 License Tools, refer to [IC-CAP Licensing](#).

What's New

Enhancements

- Non-MDM Data files can now be imported and exported using Python. This will work seamlessly from the UI "Import Create" and "Export Data" buttons. This feature is already enabled for the supported Maury/AMCAD .mps/.mes files and for simple CSV files. To simulate imported setup, you will need to run a simulator that supports LIST/LSYNC type of Input Sweeps such as ADS or ELDO. The ICCAP_FILE_IN_OUT_FUNCS variable defined in the iccap.cfg file governs this feature and users may customize it by adding their own Data File extensions. For more information, refer to [Data File Import and Export Using Python](#).
- WaferPro: The value of Step Delta Temperature for Temperature Stepping Control can be set by user.
- WaferPro: The Realignment in "Wafer" Stabilization can be disabled by user.
- WaferPro: The Realignment in "Thermal" Stabilization can be disabled by user.
- WaferPro: Temperature Stepping Control can be disabled by user.
- Python InstrVar class enhanced to accept two arguments, path and field name. In addition, The original class instantiation with a single argument now supports slash in the fieldname part of the path as well.

Changes

- The Python module pivimport.py released in PathWave Device Modeling (IC-CAP) 2020 Update 2.0 was moved from \$ICCAP_ROOT/iccap/lib/python to \$ICCAP_ROOT/iccap/lib/python/icutils. Therefore, in order to use the module, to import the file, you must use the line 'from icutils import pivimport'. See the file PIV_IMPORT_Example_FET.mdl in the examples/new_features/ICCAP_2020_Update2 directory.

Issues Fixed

- Fixed the issue of BSIMSOI4 AdMOS package not simulating with ADS 2019.
- Fixed the issue of Swept IMD Power measurement not functional when system variable UNIT_ORDER_ON is set.
- Fixed the issue of incorrect Netlist file while using spectre_spi and performing a parameter temperature sweep, when all functional lines in the circuit are #echo.
- Fixed the issue of save to *.ds was not including data from transforms.
- Fixed the issue of PathWave Device Modeling (IC-CAP) export to dataset for ADS exports Complex Transform as real only.
- Fixed the precision issue, where the default precision was set to 4. Now, the default precision is set to 6.
- Fixed crash in IC-CAP when editing Input Definitions and/or cutting and pasting Inputs in IC-CAP setups when the Inputs are of LSYNC or SYNC based sweep types and have a master sweep defined.
- Fixed issue with .mes file import, S12 and S21 data were switched during import.
- Added 'DISABLE_UNUSED_UNITS' System Variable as turn-off option to get back to the old behavior.
- **linfit** documentation is updated to explain its requirements. **linfit3** should be used when there are no Inputs defined or the number of points is 1.
- Fixed the mdl file writer issue for customized driver Instrument Tables.
- Fixed the issue of saving PathWave Device Modeling (IC-CAP) setups with SYNC, TEXT_LSYNC or LSYNC sweeps to ADS dataset (.ds) files. Such sweep data is now correctly filled in the .ds file.

Installation

- If Keysight IO Library is installed by super user/root on Linux and other users on that machine want to use the IO Library, the following steps should be done:
 - Change permission of files under /dev/pcigpib
 - Add user to kt-iols, usbtmc and dialout groups

NOTE

For more details, refer Keysight IO library documentation.

- During installation of any product, if you get a warning message related to previous version detected and that release is already uninstalled, go to the .com.zerog.registry.xml file in the C:\Program Files | (x86)\Zero G Registry\.com.zerog.registry.xml (hidden file folder) and remove the old entry manually.
- On Linux platforms: If using National Instrument IO Libraries, Keysight IO Libraries, or TAMS IO Libraries that support VISA interface and instrument connections, these are the default locations that PathWave Device Modeling (IC-CAP) will search on startup for the appropriate libvisa.so shared VISA IO shared library file with executable permission
 - The Linux PathWave Device Modeling (IC-CAP) startup script will look for a VISA Shared IO library file named libvisa.so on the Linux system in the following methods in order
 - If the optional environment variable **VISA_IO_LIBRARY_PATH** is set in the current user's environment to have the full file path location to the libvisa.so file, PathWave Device Modeling (IC-CAP) will try to use that libvisa.so specified file path and no other.

- If the `VISA_IO_LIBRARY_PATH` environment variable is not set, then PathWave Device Modeling (IC-CAP) will search for a compatible VISA IO Library shared library in the following locations:
 - (Red Hat Enterprise 7 Only) PathWave Device Modeling (IC-CAP) will search for Keysight IO Libraries VISA IO shared library files with executable permissions
 - Linux 64-bit OS (Red Hat Enterprise 7) only: `/usr/local/lib64/libivivisa.so` and `/opt/keysight/iolibs/libktvisa32.so`
 - If not found, then PathWave Device Modeling (IC-CAP) will search for a NI IO VISA Libraries `libvisa.so` shared library file with executable permissions at the following location:
 - Linux 64-bit OS: `/usr/local/lib64/libvisa.so` or `/usr/lib/x86_64-linux-gnu/libvisa.so`
 - Linux 32-bit OS: `/usr/local/lib/libvisa.so`
 - If not found in the previous location, then PathWave Device Modeling (IC-CAP) will search for a TAMS IO Libraries `libvisa.so` shared library file with executable permissions at the following location:
 - Linux 64-bit OS: `/usr/lib64/libvisa.so`
 - Linux 32-bit OS: `/usr/lib/libvisa.so`
 - If not found in the previous location, then PathWave Device Modeling (IC-CAP) will search for the IVI Foundation `libivivisa.so` shared library file with executable permissions at the following location:
 - Linux 64-bit OS only: `/usr/lib64/libivivisa.so`

NOTE

The IVI foundation's VISA IO `libivivisa.so` will only be able to communicate via VISA IO with instruments if there is a vendor IO Library installed (i.e. Keysight IO Libraries or another vendor) and registered with the IVI foundation's `libivivisa.so` as an available vendor VISA IO library installed on the system.

Licensing

- PathWave Device Modeling (IC-CAP) requires: a) the **version 2019.02** of the EEsof EDA licensing software, b) a minimum code-word version **2019.02 or above**, and c) the licensing server software, **lmgrd** and **agileesofd**, to be upgraded to at least the same versions as what are included in EEsof EDA Licensing software **2019.02**. IC-CAP will not start if any of these requirements is not met. Refer to the [License Codeword Version Compatibility](#) Table.
- In the EEsof EDA License Tools version 2019.02, licensing vendor daemon (**agileesofd**) is integrated with FlexNet FNP **11.13.1.4** version (Windows) and FlexNet FNP **11.13.1.3** version (Linux) of FlexNet license manager daemon (**lmgrd**). For the Windows platform, PathWave Device Modeling (IC-CAP) installer will automatically set up these two new license server daemons by default for the local node-locked license users; for the Linux platform, you need to follow the [Linux Licensing Setup](#) instruction to complete the licensing configuration process. For more details, refer to [Licensing \(For Administrators\)](#).

Documentation

Starting with the 2020 release, the online help gets a new user interface. The new UI improves overall online help usability by providing the following key benefits in addition to several other minor benefits:

- **Table of Contents Sidebar:** Displays collapsible Table of Contents for the entire documentation. The left-double-arrow icon collapses the sidebar, and the right-double-arrow icon displays the sidebar back again.

- **PDF Button:** Allows you to instantly generate PDFs of the latest documentation anytime, including current page's children pages. Currently, the PDF generation option is available only for 2020 release. For other releases, you can switch to their Printing Manuals page and download the existing PDFs like earlier.
- **Product Release Switcher:** Allows you to view the current page in other supported releases listed in the drop-down menu. Once you select a release from the drop-down menu, the current page is updated to show the content applicable to the selected release. The Table of Contents is updated as well. With this, you bookmark URL of only one release and then switch to other releases from this drop-down menu.
- **Latest Documentation:** The documentation available in the new UI is always kept updated for all supported releases. These updates are available to you as soon as they happen at our end. This provides you 24x7 access to the most recent and technically accurate documentation.

For more details, see [How to Use Online Help](#).

Known Issues

Problem	Solution
It takes longer time for IC-CAP to launch.	<p>Here is the list of possible causes and workarounds:</p> <ul style="list-style-type: none"> ▪ Network condition to the license server(s) can affect the launch time. ▪ If a LAN-GPIB interface or a TCPIP instrument had been connected last time and if the connection is offline at the next start of PathWave Device Modeling (IC-CAP), it could be no response until it is timeout (default is 120s). Workaround: If this is the case, get the connection back online. Another workaround is before launching PathWave Device Modeling (IC-CAP), open <UserHOME>/.icconfig file in a text editor, search for 'LINK HDWR "Hardware"', and at the dev_file_list section change the interface/connection name to "dummy". ▪ Cleaning up the temporary folder, which is normally '<UserHOME>\AppData\Local\Temp' on Windows, that PathWave Device Modeling (IC-CAP) uses could be a potential solution for the longer time to launch.
The BSIMCMG and BSIMBULK Package are not supported for simulation with the ADS simulator (hpeesofsim) for 32-bit platforms.	The 64-bit versions of ADS and IC-CAP work fine.
System variable WAFERPRO_HIDE_S2_STATUS does not work on Linux.	NA
In the DEFINE_EXTR_BOX Utilities transform, if you press <i>OK, Done!</i> , the window is reopened, but it takes the parameter.	Press <i>OK, Done!</i> and close the Window using the Close window button (in top-right corner).

Problem	Solution
<p>Using Two-Port simulations with DC outputs in Eldo, some two-port points (often only the first curve) will show minor variance from the Two-Port Simulation alone. These variances have only been observed beyond 8 digits of precision. Keysight is working with Mentor to determine the root cause of this variance.</p>	<p>Unless the precision beyond 8 digits is crucial, this can be ignored.</p>
<p>ASM_HEMT_MODELING or MVSG_MODELING if opened through right click 'Edit...' will not load automatically the required *_GaN_UTILITIES model files. As a result most transform execution will show a Error:</p> <p>For ASM_HEMT_MODELING</p> <p>NOTE [...] Function iccap_func could not locate 'ASM_HEMT_GaN_UTILITIES/ [...]</p> <p>For MVSG_MODELING</p> <p>NOTE [...] Function iccap_func could not locate 'MVSG_GaN_UTILITIES/ [...]</p>	<p>Go to the Main IC-CAP window and double click on the ASM_HEMT_MODELING or MVSG_MODELING file.</p>
<p>Angelov-GaN modeling package: Tune/Optimize does not work with the ADS built-in model in ADS2019/ ADS2020.</p>	<p>Since the angelov_gan.va file is no more included in the new ADS versions, the compiled va library of the model for the ADS versions was added in this PathWave Device Modeling (IC-CAP) installation, which resolved the tuner/optimizer issue as a workaround. Note that the model name used in the package was changed from 'angelov_gan_va' to 'angelov_gan' as the default.</p>
<p>Angelov-GaN modeling package / ADA-HBT modeling package gives error: ERROR: Could not set Cal/State File Name [.cst only] to ...</p>	<p>The instrument option name of the PNA driver was changed to "Cal/State File Name [.csa .cst only]". To update the internally-stored instrument options list, click Reset IO Table button in the Measure module window.</p>
<p>Angelov-GaN modeling package / ADA-HBT modeling package gives error: ERROR: Keysight PNA.xx.xx: While recalling calibration file : C:\134Users\134Public\134Network Analyzer\134Documents\134atxxx.csa</p>	<p>Use forward slash instead of backslash even on Windows, for example:</p> <ul style="list-style-type: none"> ▪ C:/Users/Public/Network Analyzer/Documents/atxxx.csa ▪ C:/Program Files/Agilent/Network Analyzer/Documents/atxxx.csa <p>Note: If the file is in the PNA-default folder (see PNA manual), just file name without path will work.</p>
<p>Angelov-GaN modeling package: simulation fails with ADS 2014 on Windows7 32-bit platform.</p>	<p>NA</p>

Problem	Solution
B1500A: Invalid Pulse Width setting in the Instrument Options table results in Error-120: Incorrect parameter value.	Set valid Pulse Width: HPSMU/MPSMU/HRSMU: >= 500us MCSMU: >=50us / 2us resolution
Instrument option settings is not correctly handled in measurements if WPRO_INIT transform is added and it does not have the call to load instrument options.	Insert a line to call WPro_LoadInstrOptions(RoutineName, SetupName) function in the WPRO_INIT transform of the user-defined Routine/Setups.
E4991B is not supported.	NA
In B1500, the measurement fails with NI IO Library in the old instrument mode.	Close the Nucleus software and restart the computer.
Unable to simulate few setups in BSIMSOI4 Modeling Package using ADS 2019 Update 1.0 and ADS 2019.	Use ADS 2017 Update 1.0 for simulation in the BSIMSOI4 Modeling Package.
Variable containing double quotes is not parsed accurately.	This issue exists in files that are saved in older versions of IC-CAP. If you save the file in earlier versions 2016.04 with a variable, for example, <i>xyz "test"</i> and reload it in 2016.04/2018/2020 Update 1. This variable will show as <i>xyz "</i> or something similar. This issue is fixed in the latest PathWave Device Modeling (IC-CAP) release. Workaround: <ul style="list-style-type: none"> ▪ Load the file into IC-CAP 2020 or later. ▪ Fix the double-quoted string in the variables. ▪ Save the file with the new IC-CAP 2020 or later.
PathWave Device Modeling (IC-CAP) cannot retrieve data from HSPICE result if the number of signals exceed 512.	Workaround: Reduce the number of output nodes by adding <code>#echo .option posttop=1</code> to the HSPICE simulations. This option defines the hierarchy depth saved in output file. For <code>posttop=1</code> , HSPICE only saves voltage and current information of top level nodes and branches.
When changing DIODE parameters in the Qg setup (time-domain simulation), at some point the parameter change makes the simulation not running without error, and it never recovers from the deadlock until turning on the Simulation Debugger.	Workaround: The cause seems to be too high impedance at the Gate node of the model for the time-domain simulation. Add a 100 Tohm resistance between G-S of the transistor in the Test Circuit.
2x Model files with two Circuit (Models) <ul style="list-style-type: none"> ▪ If model file #1 circuit is changed but you only simulate the circuit file #2, the update from one does not get parse correctly automatically 	Workaround: If you simulate, all the referenced models need to get parsed so include all other model files.

Problem	Solution
In spmodeads simulation, even if there are undefined variables used in .scs files, simulation with Simulation Debugger open using ADS2020 Update1 (or earlier versions) does not give the error and appears to be successful, while with Simulation Debugger open the simulation fails.	<p>Workaround:</p> <p>If using ADS2020 Update2 or newer versions, the error on the undefined variables is shown in the output of the Simulation Debugger, so you can view the issue in the .scs files.</p>
There is an issue when simulating noise simulations using AFS simulator when the frequency sweep for the simulation is a LIST sweep and this is the only ordered sweep in the setup. In this case, the simulation fails.	<p>Workaround:</p> <ol style="list-style-type: none"> 1. Use LOG, LIN, or CON for frequency 2. If there are also CON sweeps in the setup (likely), change one to be a LIST with 1 point which is the same value as the CON before changing to a LIST. This will introduce a 2nd order sweep which will enable the simulation to work which identical to the original simulation.

NOTE

To view known issues from the previous release, refer: [Release Notes 2018](#), [Release Notes 2018 Update 0.1](#), [Release Notes 2018 Update 0.2](#), and [Release Notes 2020 Update 1.1](#).

Documentation

- On Windows, Printing directly from installed help generates non-readable output. **Workaround:** Use PDF version of the document for printing purpose.
- In the installed help when you open a page using the "Open a link in new tab" option the help does not open a page in a different tab by default. You need to set the preferences to open any link in a new tab. To set the preferences:
 - a. From the 201x version of the installed help, Click **Edit > Preferences**. The Preferences Dialog box is displayed.
 - b. Select the **Options** tab.
 - c. Under Appearance, select the **Show tabs for each individual page** option. This is one time setting for a particular release of a product.
- While using the installed help, you may encounter issues like help not showing any content, it throws an error, it displays unexpected hierarchy in the Content tab, or it does not display any search results. **Workaround:** Close the help, delete the contents of the following directory and open the help again.
 - On Windows: C:\Users\\AppData\Local\Keysight\Help
 - On Linux: \$HOME/.local/share/Keysight/Help
- The installed help search does not support `[]` or `{}` or any other text using these combinations.

Simulation

- Segment Sweep with Noise analysis is not creating the correct netlist for the ADS simulator.
- Simulating to ADS 2014.01 or later requires IC-CAP 2014.04 or newer version. Older versions of IC-CAP cannot work with ADS 2014.01 and beyond.
- When performing ADS simulations with Verilog-A references using ADS 2014 and IC-CAP 2014.04 on Linux, ensure to set the environment variable, ADS_LICENSE_FILE, to reference your IC-CAP

license file before launching IC-CAP. Without this setting, ADS will be unable to properly compile *.va files for simulation.

- ADS simulations to IC-CAP 2016.01 are now performed in the \$HOME/hpeesof/iccap_ads/data directory and not in the current working directory. Although it does not affect most simulations, if you direct ADS to load a file relative to the current working directory with the assumption that current working directory will be the same as IC-CAP, this will no longer work for simulations to ADS 2016.01. Please modify such netlists to refer to the full path of the file that ADS must access.

Installation

Problem	Solution
<p>On Windows systems, if you have installed a pre-release version of IC-CAP and then try to install the current version or a newer version of the IC-CAP release, you can get the warning stating 'Previous Version Detected' even though you have uninstalled the current version properly.</p>	<p>To get past the 'Previous Version Detected' message while installing, you need to delete the .com.zerog.registry file.</p> <ul style="list-style-type: none"> ▪ On 64 bit systems the file is at C:\Program Files (x86)\Zero G Registry\ .com.zerog.registry. ▪ On 32-bit systems, the path to this file is C:\Program Files\Zero G Registry\ .com.zerog.registry. (The directory Zero G Registry is a hidden folder so you need to turn on <i>Show hidden files...</i> On Windows 7, you can get to this setting under Control Panel\Appearance and Personalization\Show hidden files and folder.)
<p>IC-CAP ships with an installation of ImageMagick 'convert' for the Save Image feature in plots. Without a working 'convert' call, the Save Image option can only save JPG, BMP, PNG, PPM, XBM, and XPM formats. The version of convert shipped with IC-CAP does not work on Red Hat version 5, though most default installations of Red Hat version 5 will have a working ImageMagick tool in /usr/bin/convert folder. IC-CAP tests for a workable 'convert' program during launch. Initially at \$MAGICK_HOME/bin/convert, then within IC-CAP installation, and finally within the path. A warning about the limited save options are issued at launch if no working version of 'convert' is found.</p>	<p>To avoid this warning, you can install a current version of ImageMagick on your system or set the MAGICK_HOME environment variable to a working installation.</p>

Problem	Solution
IC-CAP 2020 crashes while launching the 32-bit installer on some 64-bit machine.	<p data-bbox="863 383 1369 434">A possible workaround is to install the following libraries:</p> <ul data-bbox="884 465 1222 1043" style="list-style-type: none">▪ dbus-libs.i686▪ libstdc++.i686▪ zlib.i686▪ libXrender.i686▪ libICE.i686▪ libSM.i686▪ libXext.i686▪ libX11.i686▪ xcb-util.i686▪ libXi.i686▪ compat-libxcb.i686▪ libxcb-devel.i686▪ xcb-util-devel.i686▪ xcb-util-image.i686▪ xcb-util-image-devel.i686▪ xcb-util-renderutil.i686▪ xcb-util-renderutil-devel.i686▪ xcb-util-wm.i686▪ xcb-util-wm-devel.i686▪ libX11-devel.i686▪ libICE-devel.i686▪ fontconfig.i686 <p data-bbox="863 1115 1334 1167">On RHEL 7.1 Workstation.x86_64, install the following libraries:</p> <ul data-bbox="884 1198 1246 1915" style="list-style-type: none">▪ compat-libcap1-1.10-7.el7.i686▪ libXrender-0.9.8-2.1.el7.i686▪ dbus-libs-1.6.12-11.el7.i686▪ libstdc++-4.8.3-9.el7.i686▪ fontconfig-2.10.95-7.el7.i686▪ libxcb-devel-1.9-5.el7.i686▪ libICE-1.0.8-7.el7.i686▪ readline-6.2-9.el7.i686▪ libICE-devel-1.0.8-7.el7.i686▪ sqlite-3.7.17-4.el7.i686▪ libSM-1.2.1-7.el7.i686▪ xcb-util-0.3.9-4.el7.i686▪ libX11-1.6.0-2.1.el7.i686▪ xcb-util-image-0.3.9-4.el7.i686▪ libX11-devel-1.6.0-2.1.el7.i686▪ xcb-util-wm-0.3.9-5.el7.i686▪ libXext-1.3.2-2.1.el7.i686▪ zlib-1.2.7-13.el7.i686

Problem	Solution
	<ul style="list-style-type: none"> ▪ libXi-1.7.2-2.1.el7.i686
<p>If McAfee antivirus is running, it may pause the installation.</p>	<p>On disabling the Security firewall option in McAfee antivirus settings, the installation works fine. After the installation is complete, enable the Security firewall option in the McAfee antivirus settings.</p>
<p>On Linux, PathWave Device Modeling (IC-CAP) is only able to communicate with either Keysight IO Libraries Suite 2020 or later versions, or the TAMS IO Libraries installed on the same system, but cannot work with both TAMS and Keysight IO libraries installed at the same time. The libsicl.so installed by both Keysight IO Libraries Suite and TAMS IO Libraries will overwrite each other in the <code>/usr/lib64/libsicl.so</code> location.</p>	<p>Choose to only install either Keysight IO Libraries Suite 2020 or TAMS IO Libraries on the Linux Red Hat Enterprise 7 platform.</p>

Licensing - Known Issues

- Unable to install Licensing Hardware Key Drivers on Windows.

Workaround: Turn off UEFI Secure Boot (BIOS) and use the default 6.3 version of the Wibu key driver delivered with the EEsof Licensing tools.
- Licensing may not support a license file path that is too long. This will likely occur when you have too many license files.

Workaround: Remove some license files, move the license files to a shorter directory path or to combine license files into a single file.
- License Setup wizard may not be able to start license server with many license files. During setup, it may lead to a situation where a command prompt window appears/disappears incessantly. This is due to the fact that License Setup wizard is not able to start `lmgrd` with a long command line and may get stuck in a loop.

Workaround:

 - a. It is recommended to combine all license code words tied to same MAC ID into single license file to avoid setting large number of license files.
 - b. Try to use a shorter path to place license files.
 - c. If #1 and/or #2 does not help, start the license server (`lmgrd.exe`) from the command line (e.g. `lmgrd.exe -c <lic-file-path> -l <license_server_log.txt>`) and then set `<PRODUCT>_LICENSE_FILE=<PORT-NUMBER>@localhost` for product you want to use on same PC.
- Dongle drivers for Flex-10 dongles on Linux are release specific. Installing the latest dongle drivers on Linux will function properly only for the most recent EEsof releases.

Workaround: Install and use dongle drivers as needed. If you need to run the most recent EEsof releases, use the latest Flex-10 dongle driver. If you need to use older releases, uninstall the latest dongle driver and re-install the older dongle driver
- FLO and EEsof License setup are writing server logs at different locations. However, the EEsof server log file location is updated in the License Manager > Environment tab.
- When multiple **same-named** INCREMENT lines **of different version** exist on the license server, few advanced FlexNet options to reserve/limit licenses may not work properly.
- Product Selector “Check Availability” generates incorrect results (which leads to license failure) for older releases when multiple date base versions of like-named bundles exist in the license pool.

- In Linux, Product Selector **OK** and **Cancel** Buttons locations are reserved.
- Starting from FlexNet Publisher 2015 (also known as version 11.13.1), the adoption of the best practice of the least-privilege security therein results in the License Server related Windows Service to run with the LocalService Account privilege (instead of the LocalSystem privilege as before.) Running with the LocalService Account privilege, an executable can no longer access any files located in the per-user specific type of folders. As a result, any license file placed in those folders can no longer be accessed by the License Server when the License Server is automatically started via the Windows Service upon each PC reboot. For the local node-locked license, this would not result in any disruption to the usage of EESof applications; however, for the license installed on a network PC that is accessed by multiple client PCs, this may cause EESof applications not to start after the network PC reboots

Workaround: Store your license files in the Windows folders that are accessible by the LocalService Account privilege. For example, C:\ProgramData or C:\users\public are both qualified choices. In general, any folder that has the "Users" group listed in its Properties > Security page and this "Users" group has the *read* permission enabled should work.

- Using the default port to connect to a license server may cause a delay when checking out licenses. If no port is given in the license file, Flexera scans ports 27000 to 27009 to find the port. Starting from FlexNet Publisher 2015 (aka version 11.13.1), the default timeout for the response from each port increased from .1 seconds to 3 seconds.

To avoid the delay, KSM now issues licenses with port 27009 instead of leaving this blank. The EESof License Setup Wizard (from Licensing 2017.01 onwards) handles some common situations such as: where it detects license file(s) without port, when users get a new license file with port 27009, or when all license files for a vendor daemon does not have same port.

NOTE

You will not be able to start the license server if all license files for a vendor daemon on a server does not have same port.

Users who manually setup a license server or using EESof License Setup Wizard with older licensing bits may need to manually edit license files to comply with the following rules:

- a. All license files for a vendor daemon on a server must use the same port (or all be blank).
- b. Using the default port (blank) is allowed but may result in longer checkout times.
- c. If setting up a network server, select an unused port that is not blocked by a firewall.

Workaround: If the user cannot change the port, or wants to use the default Flexera ports, the environment variable FLEXLM_TIMEOUT can be set to .2 seconds (200000), to minimize the performance degradation. However, if the network latency is an issue in your environment, you may need to fine-tune this setting to minimize the general performance degradation while still accommodating the network latency.

- Installation of EESof EDA tools (such as, SystemVue 2016.08, Genesys 2017.XX, or ADS 2017.XX) may hang at 4% (percentage vary based on the products) for few hours or even more on some specific machines.

Workarounds:

- Disable Firewall setting in Anti-Virus Software installed on the PC.
or
 - Download and unzip process explorer from the below link and then invoke *procexp.exe*.
<https://technet.microsoft.com/en-us/sysinternals/processexplorer.aspx>
Right click on the *wusa.exe* process under <Product installer exe> and select KillProcess. Now it will continue the product installation.
- After installing EESof EDA tools (such as, SystemVue 2016.08, Genesys 2017.XX, or ADS 2017.XX) successfully and try to invoke the software or License wizard, you may encounter "api-ms-win-crt-runtime-l1-1-0.dll" missing error.

Workaround: Install the Update for Universal C Runtime in Windows . On Windows 64-bit system systems, the file to install is x64 version of the Microsoft hotfix KB2999226. A copy of the Windows6.1-

KB2999226-x64.msu Microsoft 64-bit hotfix installer can be found under the C:\Program Files\Keysight\EEsof_License_Tools\bin directory. The Microsoft hotfix KB2999226 can be found under the Update for Universal C Runtime in Windows page at <https://support.microsoft.com/en-us/help/2999226/update-for-universal-c-runtime-in-windows> as well.

- On a newly formatted RHEL system, the EEsof Licensing tools may fail to boot. This is because the FlexNet Publisher 2015 requires a certain rpm
Workaround: Under the EEsof product installation directory, there exists a utility script named "*Linux_sys_check.sh*" under the *bin* directory. Run this script to find out whether any rpm is missing; run this script with a "-y" command-line option to also have all the missing rpms automatically installed if you have the *sudo* or *root* privilege.
- License server may stop recognizing Flex-10 dongle on some systems within a few hours after starting
Workaround: If you experience this problem, install the latest WibuKey drivers from [Wibu Systems](#).
- Unable to install Flex-10 driver if Flex-9 dongle is already plugged into a machine
Workaround: Before installing a Flex-10 driver for the first time, unplug the Flex-9 dongle.
- There is a known FlexNet Publisher issue, whereby mixing node-locked codewords and floating codewords in one license file can result in: a) Remote simulations not working or b) A second local simulation not working in case the license is node-locked and also has incorrect version.
Workaround: It is strongly recommended that you do not mix node-locked codewords and floating codewords in one license file nor in *any* configuration that ends up with node-locked codewords and floating codewords both available on the same server. In other words, put the node-locked license and the floating license on different servers, and point to the respective one based on what you need to run.
- If a user simultaneously runs two instances of a product and has mixed different versions of the same codeword on one license server, extra licenses may be pulled and result in unexpected "Licensed number of users already reached for this feature" errors.
Workaround: We recommend you remove expired codewords, to separate out the new and the old versions of codewords into different files and different servers, and to point to the respective one based on what you need to run.
- Not specifying the TCP/IP port for the license server during license setup may lead to unexpected behavior and/or license checkout failure on the Windows platform. We strongly recommend you to always explicitly specify the TCP/IP port associated with each license server.
- A node-locked and floating bundle operating on Linux cannot be shared between products using EDA License Tools version older than 2014.01 when run at the same time.
- License Setup Wizard does not remove any previous user-configured FLEX Windows License Service manually set up by a user using FlexNet's lmttools.
Workaround: You must remove the previous user-configured Windows License Service via lmttools.
 - Run the lmttools.exe from C:\Program Files\Agilent\EEsof_License_Tools\bin to invoke the lmttools utility. The lmttools utility window is displayed.

CAUTION

If you have installed an EEsof product released before 1st August, 2014 on your system prior to installing an EEsof product released after 1st August, 2014 then the default EEsof Licensing tools path will remain C:\Program Files\Agilent\EEsof_License_Tools. On the systems that only have EEsof products released after 1st August, 2014 installed then the default EEsof Licensing tools path will be C:\Program Files\Keysight\EEsof_License_Tools.

- In the **Service/License File** tab, check the **Configuration using Services** option. All user-configured FLEX Windows License Services will be listed.
- Select the service you wish to remove.
- Select the **Config Services** tab and click the **Remove Service** button to remove the service. To ensure that the license service or *lmgrd* is running, click **View Log**. A log window appears that confirms whether *agileesofd* and *lmgrd* are up and running.

- While running multiple versions of prior IC-CAP releases together, set IC-CAP_MAXIMUM_BUNDLE_USAGE=ON in your environment so that all of them will use the same method to check out licenses. Otherwise, you might receive an error message, "Licensed number of users already reached".
- On some Windows 7 machines, when more than one definition of an Ethernet adapter exists (duplicates), license checkouts may appear to hang up.
Workaround: Disable the duplicate network card definitions in your network settings: **Control Panel > Network and Internet > Network Connections**. This issue has been acknowledged by Flexera and they have created a bug report (SIOC-000103097).
- For LSF style distributed simulations, ensure that the PATH on the client computer points to the \$HPEESOF_DIR/EEsof_License_Tools/\${architecture} directory that corresponds to the EEsof release being used. This needs to be done in order to ensure that the proper version of the Flexera utilities (like *lmutil*) gets picked up in the path before any older in-compatible versions (that may also be installed on a users' system.)
- **License Setup Wizard (*aglmwizard.exe*)**, which is used to set up and record the license path would not work if you already have an environment variable set for IC-CAP_LICENSE_FILE.
Workaround: You can use IC-CAP_LICENSE_FILE variable to point to license file or refer to **Licensing (For Administrators)**.
- The License Setup Wizard will exit or not properly configure a license server, if the server has all of its licenses currently in use.
Workaround: Wait for a license on the server to become available as you normally would before launching the product.
- Unable to set license in case unicode characters are used either in path or license file name because the Flex License Service does not support these characters.
- The Product Selector tool will be unable to display the license server status properly when connected to older license server.
Workaround: Upgrade your license server to the latest version.
- EEsof Licensing Tools installer can hang on systems with McAfee LiveSafe installed and running the default firewall settings.
Workaround: Prior to installing EEsof Licensing Tools, temporarily turn off the McAfee LiveSafe firewall.
- Licensing setup steps on systems with McAfee LiveSafe installed can fail.
Workaround: Under the McAfee LiveSafe firewall settings, under Port and Settings, allow the use of port 27001 for lmgrd.exe under the EEsof Licensing Tools installation bin directory. Under Internet Connections for Programs, enable lmgrd.exe, aglmmgr.exe and aglmwizard.exe for all devices and turn off monitoring.
- On Windows, EEsof product releases prior to 2014 can have boot time issues with licensing if a newer EEsof product is installed prior to installing the older product. For example, if a user installs Advanced Design System 2017 and then installs Advanced Design systems 2014.01, the user can have boot time errors with ADS 2014.01.
Workaround: For Advanced Design System users, set a system environmental variable named ADS_LICENSE_FILE under the Control Panel/ System, and Security / System / Advanced system settings and under the "environmental variables". Add a System variable named ADS_LICENSE_FILE and the value will be the path to your local license file or the port@host setting for your site.

