

EMPro
2015.01

Release Notes

Notice

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Version 3, 29 June 2007

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PVM

PVM version 3.4: Parallel Virtual Machine System

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Python

A. HISTORY OF THE SOFTWARE

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Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release Derived Year Owner GPL- from compatible? (1)

0.9.0 thru 1.2 1991-1995 CWI yes

1.3 thru 1.5.2 1.2 1995-1999 CNRI yes

1.6 1.5.2 2000 CNRI no

2.0 1.6 2000 BeOpen.com no

1.6.1 1.6 2001 CNRI yes (2)

2.1 2.0+1.6.1 2001 PSF no

2.0.1 2.0+1.6.1 2001 PSF yes

2.1.1 2.1+2.0.1 2001 PSF yes

2.2 2.1.1 2001 PSF yes

2.1.2 2.1.1 2002 PSF yes

2.1.3 2.1.2 2002 PSF yes
2.2.1 2.2 2002 PSF yes
2.2.2 2.2.1 2002 PSF yes
2.2.3 2.2.2 2003 PSF yes
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2.3.3 2.3.2 2002-2003 PSF yes
2.3.4 2.3.3 2004 PSF yes
2.3.5 2.3.4 2005 PSF yes
2.4 2.3 2004 PSF yes
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2.6.3 2.6.2 2009 PSF yes
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2.7 2.6 2010 PSF yes

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Julian Seward, jseward@bzip.org

bzip2/libbzip2 version 1.0.5 of 10 December 2007

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Mersenne Twister

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A C-program for MT19937, with initialization improved 2002/1/26. Coded by Takuji Nishimura and Makoto Matsumoto.

Before using, initialize the state by using `init_genrand(seed)` or `init_by_array(init_key, key_length)`.

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Any feedback is very welcome.

<http://www.math.keio.ac.jp/matamoto/emt.html>

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The socket module uses the functions, `getaddrinfo()`, and `getnameinfo()`, which are coded in separate source files from the WIDE Project, <http://www.wide.ad.jp/>.

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L. Peter Deutsch

ghost@aladdin.com

Independent implementation of MD5 (RFC 1321).

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The original and principal author of md5.h is L. Peter Deutsch <ghost@aladdin.com>. Other authors are noted in the change history

that follows (in reverse chronological order):

2002-04-13 lpd Removed support for non-ANSI compilers; removed references to Ghostscript; clarified derivation from RFC 1321; now handles byte order either statically or dynamically. 1999-11-04 lpd Edited comments slightly for automatic TOC extraction. 1999-10-18 lpd Fixed typo in header comment (ansi2knr rather than md5); added conditionalization for C++ compilation from Martin Purschke <purschke@bnl.gov>.

1999-05-03 lpd Original version.

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RLog

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haslib++

hashlib++ - a simple hash library for C++

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pstdint

A portable stdint.h

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pywin32

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adodbapi

adodbapi - A python DB API 2.0 (PEP 249) interface to Microsoft ADO

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* <http://sourceforge.net/projects/pywin32>

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django adaptations and refactoring by Adam Vandenberg isapi

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EMPro Release Notes

The EMPro 2015.01 HF1 release provides enhancements and fixes in remote/distributed LSF simulations and touchstone export. Also several issues, such as design constraints and incorrect warning messages, are also resolved.

What's New

EMPro 2015.01 HF1 includes the following enhancements:

- Improvements and fixes in the remote/distributed LSF simulations related to passing and entering LSF queue options.
- Touchstone export is improved with higher resolution for the frequency list.
- Issue resolved with EMPro components with parameters having negative parameter values used in ADS circuit-EM co-simulation.
- Incorrect warning message on loss tangent material specification removed.
- Issue with corrupt design after archiving/unarchiving resolved.
- Issue with design constraint in sketches resolved.

The EMPro 2015.01 release included the following enhancements:

- FEM simulator enhancements
 - Faster meshing
 - Faster overall simulation
 - Improved efficiency for high number of ports
- FDTD simulator enhancements
 - **Improved loss tangent modeling**
- **Support Coaxial ports**
- EMI analysis enhancements
 - **User-defined limit lines**
 - **Speed and usability improvements**
- Additional enhancements
 - Provides new add-ons:
 - Geometry healing/simplification tool
 - Z-scale controller
 - Frequency plan setup improvements
 - Laird ECCOSORB BSR-1 material support

What's New in Licensing

- EMPro requires: a) **version 2014.07** of the EEs of EDA licensing software, b) version **3.2** codewords to run, and c) **the licensing server software, lmgrd and agileesofd, to be upgraded to at least the same versions as what are included in EEs of EDA Licensing software 2014.07.** EMPro will not start if any of these requirements is not met. Refer to the [License Codeword Version Compatibility](#) Table.
- In the EEs of EDA License Tools version 2014.07, licensing vendor daemon (*agileesofd*) is upgraded to sync up with FlexNet FNP **11.11.1.2** version of FLEX license manager (*lmgrd*). EMPro installer for the Windows platform will automatically set up these two new license server daemons by default for the local node-locked license users; for Linux, you need to follow the [Linux/Solaris Licensing Setup](#) instruction to complete the licensing configuration process. For more details, refer to [Licensing \(For Administrators\)](#).

Known Issues and Solutions

Video Drivers Compatibility Issue with EMPro

Some video drivers, such as the Intel Graphics Accelerator card and Mobile Intel(R) 4 Series Express, have known compatibility issues with EMPro. It can result in unexpected fatal errors. From the **Edit** menu, change the general application preferences and change the value of Rendering Options Transparency Algorithm, such as **Depth Peeling**.

Workaround:

- On Windows, create the EMPro shortcut on the desktop. Right-click the EMPro shortcut and select **Properties**. Access the Shortcut tab and append the existing path with the following text in the **Target** field :
 - For the Intel Graphics Accelerator card, append the existing path with: `--driver=direct3d`. Then, launch EMPro from the shortcut itself, that is, start EMPro in DirectX mode by using the following command:
`empro.exe --driver=direct3d`
 - If Mobile Intel(R) 4 Series Express chipset is your preferred graphics driver, append the existing path with `--driver=msw switch ("empro.exe --driver=msw")`. Then, launch EMPro from the shortcut itself.
- On Linux, start EMPro in X11 mode by using the following command:
`startempro --driver=x11`

GPU Cards Support

- EMPro supports only CUDA enabled GPU cards. See [GPU Acceleration for FDTD Simulations](#) for a list of supported cards. GPU cards that do not support CUDA are no longer compatible with EMPro, because Acceleware v8 legacy code is not supported. However, EMPro still supports Acceleware v9 CUDA-based hardware acceleration.
- EMPro uses CUDA version 4.0. Due to this change, the GPU driver must be updated to the latest version in order for EMPro to detect the GPUs. You can download the latest driver from <http://www.nvidia.com/Download/Find.aspx>. The download version should be at least 295.73 on Windows and 295.20 on Linux, released in February 2012 or later.

CPU Compatibility

- When running EMPro 64-bit within VirtualBox, you may get a message that the CPU is not supported. Unless the CPU of the host machine is not supported, the missing instruction can be enabled by executing the following command, where `<vmname>` is replaced by the name of the virtual machine:

```
VBoxManage setextradata <vmname> VBoxInternal/CPUM/CMPXCHG16B 1
```

Installation

- If you have not specified a HOME directory specifically for EMPro, EMPro reuses the HOME directory settings of EMPro for licensing purposes. It might interfere with the EMPro licensing settings. To avoid this problem, set the environment variable HOME to point to your preferred EMPro home directory.
- For remote login on Linux, set the environment variable HOOPS_PICTURE to `X11/myhostname.com:0.0`.
- During the Linux bit installation, if an "insert media disk" message pops up, it indicates that the Linux web download is incomplete due to a cache problem with the browser. To download the Linux bit, rename the Linux download file before saving the file on the disk drive.

Licensing

- The new license server software packaged in the EEsof EDA License Tools version 2014.01 does not work on SuSE 10 platform. Use SuSE 11 or RHEL 5 or 6 instead as your Linux license server machine.
- 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 Flexera FNP 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.
Additionally, we also recommend you to 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.
- On the Linux platform, EMPRO_LICENSE_FILE needs to be correctly specified before starting EMPro. Without that being set correctly, EMPro would not start.
- 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 2014.01 and 11.9.0.0 or earlier when run at the same time.
- The "Check-in failed" message occurs in the license activity log occasionally can be ignored; the license mentioned in this message is actually properly returned.

- License Setup Wizard does not remove any previous user-configured FLEX Windows License Service installed using FlexNet's lmtools.

Workaround: You must remove the previous user-configured Windows License Service via lmtools.

- Run the lmtools.exe from C:\Program Files\Keysight\EEsof_License_Tools\bin to invoke the lmtools utility. The lmtools utility window is displayed.
 - 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 EMPro releases together, set EMPRO_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).
 - If a license server is configured with two license versions, that is, version 2.8 and 2.9 node-locked license files, the license server may crash.
Workaround: You should combine the two license files into one file, instead of using them separately.
 - For LSF style distributed simulations, in case of windows, ensure that the PATH 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 EMPRO_LICENSE_FILE.
Workaround: You can use **EMPRO_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.
 - If EMPro does not start after you reboot your 64-bit Windows computer, and a license denial message is displayed, then it might be caused by a spurious registry entry. Check to see if registry entry `HKEY_LOCAL_MACHINE\SOFTWARE\FLEX\m License Manager\EEsof EDA License Server` exists; if it does, remove it and restart EMPro.
 - 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.

Documentation Known Issues

- EMPro online help is not supported on the Google Chrome browser.
Workaround: Use Internet Explorer or Firefox to view EMPro documentation.
- EMPro QT search does not support [] or {} or any other text using these combinations.
- Mozilla Firefox version 3.0.5 crashes on RHEL 5 machine while accessing protected EMPro online documentation from the Qt Help window.
- In case EMPro help does not show any content, throws an error, or does not display any search results, you can use the following workaround:

Workaround: Close QT Help and delete contents of the following directory.

- On Windows 7: C:\Users\\AppData\Local\Keysight\Help
- On Linux: \$HOME/.local/share/data/Keysight/Help

Distributed Simulations

- Distributed FEM and FDTD simulations on one machine (local or via a Simulation Service) is not recommended except on high-end compute servers. To maximize performance, it is advised to use proper settings for the number of threads and number of parallel processes started via distributed, such that the product of these two numbers does not exceed the number of physical cores available on the compute server.
- Distributed FEM simulations with an adaptive frequency sweep specification takes more frequency points compared to when the same adaptive frequency sweep is started in a non-distributed mode. This can be up to a factor of two. For performance reasons, it is not recommended to perform distributed FEM simulations with an adaptive frequency sweep on a single machine.
- While distributing remote FDTD simulations, start the simulation service window from the Linux terminal instead of starting the service from the Tools menu.
- Remote and distributed simulations are not supported on legacy format projects.
- Distributed simulations on PBS and Sungrid clusters are not supported for library names with spaces.

Miscellaneous

- A warning message may appear when opening malformed project models. This warning message is to recover the broken models which helps to repair the malformed objects in EMPro. It is recommended to use this option and let EMPro recover such models.
- When simulating frequencies below the cutoff frequency of the modes of a waveguide excitation, the accuracy of the multithreaded iterative solver may degrade.
- If meshing issues are encountered, see [Troubleshooting Mesh Failures](#).

- Though the Example projects are marked as read-only, you can run simulations on these projects if you use the Simple Parameter Sweep add-on or if you perform 2D waveguide port simulations. You will not be able to delete the results from these simulations from the user interface. You can manually remove them from the command line if needed. It is advised to save the Example projects in different location before doing these simulations.
- The display of the field plots are not scaled when changing the z-scale in the EMPro Geometry window