



# Metis 2019.01 Release Notes

## 1. OVERVIEW

Metis provides an efficient way to extract package models with its 3D accelerated Method of Moments (MoM) electromagnetic solver. The desired nets from bump to BGA ball in a package can be easily extracted. With its IC-package assembly capability, Metis enables the IC-package co-simulation, which helps IC designers to assess the package impact easily. Metis can be also used for advanced packaging such as 2.5D interposer with Through Silicon Via (TSV).

The Release Notes cover the following releases:

### Metis 2019.01

Release Date: July 19, 2019

The Release Notes present the latest information about Metis Version 2019.01 in the following sections:

- [Supported Operating Systems](#)
- [New Features and Enhancements in Metis 2019.01](#)

## 2. SUPPORTED OPERATING SYSTEMS

Metis 2019.01 is available on both 64bit Windows and Linux. Obtain the appropriate binary executable files for your operating system. The supported platforms for this release include:

- Windows 7 SP1
- Windows 8.1 KB2999226 or above
- Windows 10
- Linux RedHat 6

### **3. NEW FEATURES AND ENHANCEMENTS IN METIS 2019.01**

Metis 2019.01 provides new features and enhancements as described in the following sections.

#### **3.1 Usability**

- Support large-scale silicon interposer extraction.
- Support IC-package co-simulation.
- Improve MoM solver simulation efficiency with 1.7x speedup, and reduce memory consumption by 52%.
- Support automated 2D simulation flow for large scale silicon interposer and package design based on net selection.
- Unify simulation jobs submit and status monitor flow in “Submit Job” and “Job Manager” to support more user-friendly and real-time feedback batch run.
- Support multiple layout formats import and export to cover RFIC, MMIC and LTCC applications , including \*.iris, \*.dwg, \*.dxf, \*.gds, \*.brd, \*.sip, \*.mcm, ODB++ and so on.
- Create a new simulation of desired nets with the automatic cut.
- Enrich net related operations, including highlight net with different colors, show/hide nets and so on.
- Reduce import and export time by using binary file format.
- Improve editing user-experience with fully-functional Undo/Redo functionality.
- Support project auto-saving.
- Support automatically via defeaturing.
- Support delete Shape.
- Support Undo/Redo function.

### **4. NEW FEATURES AND ENHANCEMENTS IN METIS 2019.01.H1**

#### **4.1 Usability**

- Bug Fix.

## **5. NEW FEATURES AND ENHANCEMENTS IN METIS 2019.01.H2**

### **5.1 Usability**

- Display current density after simulation.
- Support new layer format.
- Support encrypted technology file.
- Allow special characters in the port name.
- Support “Quasi-static Solver”.
- Reduce simulation time by merging sidewall dielectrics.

## **6. NEW FEATURES AND ENHANCEMENTS IN METIS 2019.01.H3**

### **6.1 Usability**

- Support to extract the net information when GDS in.
- Support to add solderball on pad.
- Support to generate bump automatically.
- Support to move model with both 2D and 3D display.
- Support to flip model.
- Support to assemble model by bump.
- Support to select multi-objects to add port by Ctrl key.
- Support to show the current density.
- Support to delete net operation to delete ports at the same time.
- Support to delete geometry to delete assembly item at the same time.
- Support to set the transparency by single layer.
- Support to smooth the trace bend.
- Support to remove the uncompleted via when design cut.

## **7. LEGAL NOTICE**

The source code used in Metis comprises of both Open Source and proprietary software components.

## The Open Source components used in Metis are:

- **Qt 5.13.2**

This software uses the Qt library, a multiplatform C++ GUI toolkit from Trolltech. See <http://www.trolltech.com/qt/> for more information.

- **Clipper 6.1.3**

Freeware for both open source and commercial applications (Boost Software License).

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- **QtXlsx 0.3**

This software uses the Qt library, a multiplatform C++ GUI toolkit from Trolltech. See <http://www.trolltech.com/qt/> for more information.

- **GCC 4.8.2**

cpp (GCC): Copyright (C) 2003 Free Software Foundation, Inc.

- **MPFR 2.4.2**

MPFR is free. It is distributed under the GNU Lesser General Public License (GNU Lesser GPL), version 3 or later (2.1 or later for MPFR versions until 2.4.x). The library has been registered in France by the Agence de Protection des Programmes under the number IDDN FR 001 120020 00 R P 2000 000 10800, on 15 March 2000. This license guarantees your freedom to share and change MPFR, to make sure MPFR is free for all its users.

Unlike the ordinary General Public License, the Lesser GPL enables developers of non-free programs to use MPFR in their programs.

- **MPC 0.8.1**

The library is built upon and follows the same principles as GNU MPFR. It is written by Andreas Enge, Mickaël Gastineau, Philippe Théveny and Paul Zimmermann and is distributed under the GNU Lesser General Public License, either version 3 of the licence,

or (at your option) any later version (LGPLv3+). The GNU MPC library has been registered in France by the Agence pour la Protection des Programmes on 2003-02-05 under the number IDDN FR 001 060029 000 R P 2003 000 10000.

- **GMP 4.3.2**

The GMP Announcements mailing list is a read-only list for announcements regarding the GNU Multiple Precision Library (GMP).

- **Boost 1.72**

Boost C++ Libraries <http://www.boost.org> is licensed under the Boost Software License V1 <http://www.boost.org/users/license.html>

- **CGAL 4.9**

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- **Python 3.7.6**

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- **Klayout 0.25.3**

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- **Inno Setup 6.0.4**

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- **VTK 7.1.1**

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- **Sklearn 0.21**

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