COMSOL 4.2a Update 2

This update corrects several bugs and stability issues in COMSOL 4.2a. The update is cumulative; that is, it applies to both COMSOL 4.2a and COMSOL 4.2a Update 1 and includes all updates from the previous Update 1. Update Details.

Installation

Check your version

Make sure that you run COMSOL version 4.2.1.110 or later. On the **Help** menu, click **About COMSOL Multiphysics** to check your version. If you have an earlier build number, contact your COMSOL sales representative to get the official release of COMSOL 4.2a before you proceed.

Download Update

- Windows comsol_4.2.1.166_win.exe 41.4 MB
- Linux comsol_4.2.1.166_linux.zip 54.6 MB
- Mac OS X comsol_4.2.1.166_mac.dmg 53.4 MB

If you have a license for LiveLink™ for AutoCAD®, also download the additional update for this product

- Windows comsol_4.2.1.134_cad_win.exe 454 KB

If you have a license for LiveLink™ for SolidWorks®, also download the additional update for this product

- Windows comsol_4.2.1.134_llsw_win.exe 2.2 MB

If you have a license for LiveLink™ for Pro/Engineer®, also download the additional update for this product

- Windows comsol_4.2.1.166_llpro_win.exe 10.4 MB

If you have a license for LiveLink™ for Creo™ Parametric, also download the additional update for this product

- Windows comsol_4.2.1.166_llcreo_win.exe 14.2 MB

If you have a license for LiveLink™ for MATLAB®, also download the additional update for this product

- Windows comsol_4.2.1.134_mli_win.exe 522 KB
- Linux comsol_4.2.1.134_mli_linux.zip 116 KB
- Mac OS X comsol_4.2.1.134_mli_mac.dmg 141 KB

Install

Before you proceed with the installation, make sure to exit any running COMSOL process.

Windows

Run the downloaded .exe file to extract the update to the COMSOL 4.2a installation directory, for example: `C:\Program Files\COMSOL\COMSOL42a`.

For network administrators:

For deployment on clients on a network, the command line alternative

```
comsol_4.2.1.166_win.exe /auto h:\COMSOLROOT
```

can be used, where `h:\COMSOLROOT` is the COMSOL installation directory.

Linux

Copy the downloaded .zip file to the COMSOL 4.2a installation directory:

```
cp comsol_4.2.1.166_linux.zip [installdir]/comsol42a
```

where `[installdir]` is the root of the installation, for example `/usr/local`. Unzip it using the commands:

```
cd [installdir]/comsol42a
unzip -o comsol_4.2.1.166_linux.zip
```

If you have not disabled SELinux, run the following command:

```
chcon -t textrel_shlib_t [installdir]/comsol42a/lib/[platform]/lib*
```

where platform is glnx86 or glnxa64.

Macintosh

Double-click the downloaded .dmg file to mount the disk image. In the Finder, open the mounted disk and double-click the COMSOL installer icon. Select your COMSOL installation folder, usually called COMSOL42a.

Check your installation

1. Start COMSOL Multiphysics.
2. On the **Help** menu, click **About COMSOL Multiphysics**.
3. Check that the version number is 4.2.1.166 (If not, the installation did not succeed).

Update Details for Update 2

New Features

- Infinite Elements and Perfectly Matched Layers are now available together with PDE interfaces.

General

- Improved stability and performance.
- Corrected Function preview for interpolation functions when using non-SI units.
- Fixed crash that could occur when using Incomplete LU preconditioner.
- Fixed crash that could occur when using a Least Square Objective defined on a boundary point in 1D models.
- Fixed crash that could occur when using SOR line and running COMSOL in cluster mode.
- Fixed error that could occur when renaming a dependent variable.
- Corrected solver performance issue affecting large models (issue was introduced in COMSOL 4.2a Update 1).

AC/DC Module

- Models using the Electric Currents interface and the Joule Heating and Thermal Expansion interface can now run with a transient study.
- The Edge Current feature in the Magnetic and Electric Fields interface now works correctly in presence of frame deformation.
- Corrected the Thin Low Permeability Gap feature.
- Corrected computation of surface currents.
- Force calculations now work as expected for the Magnetic Fields, No Currents interface.

- Corrected the Magnetic Shielding boundary condition.

Batteries & Fuel Cells Module

- Lithium-Ion Battery and Battery with Binary Electrolyte Interface: Corrected electrolyte current expression to use effective electrolyte conductivity in both terms in the Porous Electrode node.
- Lithium-Ion Battery and Battery with Binary Electrolyte Interface: Overpotential variable corrected to include potential drop due to particle film resistance in Porous Electrode node.

CAD Import Module

- Corrected bug that could occur when importing geometries and using a length unit other than meter.

Chemical Reaction Engineering Module

- Corrected stabilization in the Reacting Flow, Concentrated Species interface when using Maxwell-Stefan Transport.
- Corrected the Reacting Boundary feature in the Reacting Flow, Concentrated Species interface.

Electrodeposition Module

- Corrected handling of initial values for surface and deposited concentrations so that nonzero initial values are taken into account.

LiveLink™ for Pro/Engineer® and LiveLink™ for Creo™ Parametric

- Corrected bug that occurred when transferring drawings with a length unit of microns.

Microfluidics Module

- Corrected the computation of Mean and Inverse Mean Molecular Speed in 3D.

Optimization Module

- It is now possible to add bounds only to some global control variables.

RF Module

- Corrected the Transition boundary condition.

Update Details for Update 1

General

- Improved display of numerical values.
- Progress information is now displayed also when running Client-Server on Mac OS.
- General stability improvements.

CAD Import Module

- Several stability improvements.

CFD Module

- Enhanced regularization of wall temperature equation when using wall functions in the Non-Isothermal Flow interface.

Chemical Reaction Engineering Module

- Stability improvements.
- The Nernst-Planck Equations interface has been corrected.
- Corrected CHEMKIN® file import.

Heat Transfer Module

- Stability improvements.
- Inlet, Outlet, and Fan boundary conditions now work as expected also for the case when unit system is "None".
- Corrected the interior wall boundary condition for turbulent flow.
- Improved handling of radiation groups for double-sided radiation.

Microfluidics Module

- Improved mass conservation for 3D molecular flow models with high curvature and high aspect ratio.

RF Module

- Corrected Far-Field calculations.
- Corrected a problem occurring in the Electromagnetic Waves interface when using the Perfect Magnetic Conductor feature together with the Scattered Field formulation or Mode Analysis.

Structural Mechanics Module

- Corrected effective plastic strain computations.
- Rotation and Stretch tensors are now available for all solid mechanics materials.
- Mixed Formulation for 2D-axisymmetric models has been stabilized.

LiveLink™ for AutoCAD®

- Improved stability for synchronizing geometries with many parts.

LiveLink™ for MATLAB®

- Corrected the `mphsave` command.
- Corrected handling of the `outersolnum` property.
- Custom color tables can now be added in preference directory.

LiveLink™ for SolidWorks®

- The One Window Interface now also supports SolidWorks® 2012.
- Stability improvements.