

OpenStudio Version 0.3.0 Build 3917

Release Notes – 12/16/2010

This document contains information specific to the OpenStudio suite developed by the National Renewable Energy Laboratory – Electricity, Resources and Building Systems Integration Center (ERBSIC), Commercial Building Research group, Tools Development. The document contains the following sections:

- Where To find OpenStudio Documentation
- Installation Notes
- New Features
- Known Issues

Where To Find OpenStudio Documentation

OpenStudio release documentation, including these release notes, is available at <http://openstudio.nrel.gov/documentation>

Installation Notes

OpenStudio is supported on Windows, Mac, and Linux platforms.

Installation Notes for Windows

Supported platforms are Windows XP/2000/Vista/7.

- Download EnergyPlus 6.0 from <http://apps1.eere.energy.gov/buildings/energyplus>
- OpenStudio SketchUp Plug-in requires Google SketchUp 7.0 or later (Free or Pro versions). Download from <http://sketchup.google.com>.
- Download [ruby.zip](#). Unzip to C:\ruby (or other desired location), add C:\ruby\bin folder to Path, and create environment variable RUBYOPT (leave its value blank). Some users of this install may get an error message regarding the OpenSSL library libeay.dll when using ruby gem, however, it appears that ruby gem still works in this situation.
- Download the OpenStudio installer from <http://openstudio.nrel.gov/downloads>
- Run the installer program.

Installation Notes for Mac

Supported platforms are Mac OS X 10.5/10.6:

- Download EnergyPlus 6.0 from <http://apps1.eere.energy.gov/buildings/energyplus>

- OpenStudio SketchUp Plug-in requires Google SketchUp 7.0 or later (Free or Pro versions). Download from <http://sketchup.google.com>.
- Ruby Bindings require Ruby 1.8.6 or 1.8.7, which comes installed on Mac OS X machines. No need to install.
- Download the OpenStudio installer from <http://openstudio.nrel.gov/downloads>
- Run the installer program.

Installation Notes for Linux

Supported platform is Ubuntu 10.04:

- Download EnergyPlus 6.0 from <http://apps1.eere.energy.gov/buildings/energyplus/>.
- OpenStudio SketchUp Plug-in is not supported on Linux platform, as Google SketchUp is not available.
- Ruby Bindings require Ruby 1.8.6 or 1.8.7. **sudo apt-get install ruby-full.**
- Install Qt: **sudo apt-get install libqtcore4 libqt4-sql libqt4-gui.**
- Install boost: **sudo apt-get install libboost-date-time1.4.40 libboost-filesystem1.4.40 libboost-program-options1.4.40 libboost-regex1.4.40 libboost-serialization1.4.40 libboost-thread1.4.40.**
- Download the OpenStudio installer from <http://openstudio.nrel.gov/project/downloads>.
- From the command prompt, type **sh ./OpenStudio-0.2.0.3009-Linux.sh**. This will unpack an OpenStudio directory in the current directory the shell is in (most likely ~/Downloads), so you may want to move it first.

New Features

- **OpenStudio SketchUp Plug-in 0.3.0**
 - The OSM (OpenStudio Model) file.
 - A major feature of version 0.3.0. Contains new object types that do not appear in the EnergyPlus IDD (Input Data Dictionary). The OpenStudio open-and-save operations work with the OSM file format. You can import and export to the IDF (Input Data Format) format, but that may result in a loss of information. You can use OpenStudio RunManager, which can be run through the SketchUp Plug-in or as a stand-alone application, to run a simulation from an OSM file.
 - A new icon set.
 - This differentiates the new Plug-in from the Legacy OpenStudio Plug-in and integrates it with the other OpenStudio applications. You can view and click on the icons in the Reference Guide to see a description of each new icon. See <http://openstudio.nrel.gov/documentation> for more details.
 - Improved support for linking a SketchUp file with an OSM file.
 - We still save the energy model content in the OSM file only, but the link between the OSM and SketchUp file has been fixed. This enables you to link non-OpenStudio content, scenes, and styles to the energy model.

- Interior partition surfaces.
 - These are new to the OpenStudio Model and are not part of the EnergyPlus IDD. Interior partition groups are placed inside a zone and contain interior partition surfaces, which model walls, furniture, and other surfaces that are not part of a zone boundary. You can convert interior partition surfaces to internal mass for simulation in EnergyPlus and retain these for simulation using Radiance.
- Support for a new air wall construction.
 - This can be assigned to a surface like any other construction. An air wall will be rendered as a translucent checkerboard, and can be considered the opposite of an interior partition surface (a zone boundary that does not represent a wall). Currently, air walls are exported to EnergyPlus as infrared transparent materials and are ignored by Radiance. Future versions of OpenStudio may provide additional options such as adding air transfer through air walls.
- Information for construction sets and zone loads are saved in the OSM file.
 - This enables you to transfer these objects more easily between models.
- Content from an external IDF or OSM file can be imported into a current model.
 - You can import entire models or constructions, construction sets, schedules, or zone loads only. When you import entire models, your current model is closed and the new model loaded; otherwise, the imported content is added to your current model.
- The OpenStudio RunManager Simulation Status dialog provides access to EnergyPlus output files from within the SketchUp interface.
 - You can monitor the output from running jobs and view output files in an expandable tree.
- You can now directly launch OpenStudio ResultsViewer with your SQL file using the View Results dialog.
 - This is useful for comparing traditional line and flood plots with the Plug-in's render by data mode.
- **OpenStudio Platform 0.3.0**
 - Model and ModelObject were refactored to inherit more functionality from underlying classes.
- **OpenStudio RunManager 0.3.0**
 - Enhanced workflow support with expand objects tool support.
 - Added support for XML Preprocessor tool.
 - Major UI improvements.
 - Enhanced file searching capabilities.
 - Added ability to restore application defaults.
- **OpenStudio ModelEditor 0.3.0**
 - Added support copy / paste functionality.
 - Added drag / drop functionality.
 - Added parenting functionality (tree view).

- Added workspace index ordering
- Added group and class searches.
- Added class search drag and drop object creation.
- Added dynamic context menu.
- **OpenStudio Ruby Bindings 0.3.0**
 - Added access to OpenStudio Building Model, EnergyPlus Utilities, and Core Utilities.
 - Added Model to Radiance Translation Script.

Known Issues

The following are issues known at the time of the release.

Known Issues Common to All Platforms

- **OpenStudio SketchUp Plug-in**
 - If you use push/pull to extrude a surface, you lose vertices from new surfaces when you enter the extrude distance in the measurement box.
 - This is a SketchUp 8-specific bug that we expect to have fixed with the next maintenance release of SketchUp 8. People with this bug see missing vertices from surfaces when they reopen a model. Workaround: until the update is released, you can enter guidelines or use other geometry to snap to instead of typing an extrude distance. You can also create and extrude your geometry outside a zone, then cut the geometry and paste in place from inside your zone object. If you have SketchUp 7 installed, you can also use that until the SketchUp 8 maintenance update is released.
 - If you draw or import a shading surface in a zone, EnergyPlus will process only three vertices from each surface.
 - A warning will be generated in the EnergyPlus error file to alert you. This will be addressed in a maintenance update to EnergyPlus. Workaround: you can either create shading groups as building or site level objects outside a zone (these are not affected), or you can draw shading surfaces in a zone and then triangulate them.
 - The new OpenStudio Plug-in is much more stringent about opening files with unknown or flawed objects.
 - If your file does not open automatically, you should see the error and warnings dialog pop up. You can manually open it from the OpenStudio toolbar. You need to use a text editor to alter or remove the objects listed before OpenStudio applications can open the file.
 - Unclassified surfaces are created when a long operation is canceled.
 - When you draw in a zone and extrude your plan up, OpenStudio classifies all the newly created base surfaces. Normally this is very quick, but may take longer if you have a complex shape or if you have the Object Information or Outliner window open. If you interrupt the process by exiting the zone before it is done, the surfaces

will not be classified. If this happens, you should delete and redraw the incorrect surfaces.

- If you use copy multiple on group-level OpenStudio objects, you will get one extra copy.
 - The extra group is created by the first copy-and-paste operation and is not removed when the copy multiple occurs. To address this after you do a copy multiple procedure on groups or zones, press delete. The objects you need to delete should already be selected. If you are copying loose surfaces such as windows, there are no problems as SketchUp will merge equivalent surfaces.
- Making copies of multiple zones, or multiple copies of a single zone, may be very slow.
 - You should save a file before initiating a large copy operation.
- SketchUp 8 on the Mac may shut down improperly when you close a file or quit.
 - This is expected to be addressed in a maintenance update to SketchUp 8.
- Toolbar tool-tips may not work correctly on a Mac if you have made your toolbars horizontal.
 - The tool-tips never show on a Mac in the status bar.
- The environment period drop-down menu is not updated correctly in the rendering settings dialog.
 - When changing variables, updating normalization, etc., make sure to reselect the correct environment period in the drop-down menu.
- When running a simulation from an .osm file that contains weather information, the full path to the weather file may not appear properly in the weather file text field.
 - This is a display issue only, and does not affect functionality.
- **OpenStudio ModelEditor and SystemOutliner**
 - If a field is set to “Auto-size” the units will not display. Once a valid number is input and the window redraws itself, then the units will show up. Redraw can be triggered by changing the style of the floating point display (from unformatted to scientific or back) or by picking a new model object to inspect then returning to the previous object.
 - If floating point display is set to unformatted (the default) you cannot enter any non-digits except for “.”. This means you cannot input a number in scientific notation. Switch to scientific format to allow the input of numbers in the style: 1.943e+5
- **OpenStudio ModelEditor**
 - No undo capability. Workaround: none
 - Add multiple selects in tree view. Workaround: none
 - Double-click should add class object to model. Workaround: drag / drop
 - Right-click should add class object to model. Workaround: drag / drop
 - Add “all” to object and class lists. Workaround: use string search
- **OpenStudio RunManager**
 - SSH connection error conditions are not handled during SLURM job processing. Workaround: none.
- **OpenStudio SystemOutliner**

- It is possible to drop some items in places they do not belong (for example, a fan on the demand side of the loop). This would create an incorrectly formatted .osm file that will cause EnergyPlus to fail. User input that would create invalid output will be handled in a future release. Workaround: none.
- Set-point Managers can be dropped onto the nodes of an Outdoor Air Mixer. They will render on the Air Loop display, but they will show up in the right-hand edit window. Workaround: none.
- **OpenStudio Platform, including SWIG Bindings**
 - `IdfObject::getQuantity` and `IdfObject::setQuantity` functionality is not comprehensive.
 - Workspace and Model functionality that follows pointers using the function `WorkspaceObject::getSourceIndex` may not work as expected if the given object points to the same target object multiple times. For instance, `Workspace::insert(const Workspace& ws)` may not work as expected if `ws` contains a Construction object that uses the same material layer multiple times.
 - Workspace and Model can introduce new name conflicts. For instance, if `ws` in `Workspace::insert(const Workspace& ws)` contains an object that is not in the current Workspace, but has the same name, the object will be added and its name will not be changed.
 - Using objects of type `FluidProperties:Names` or `FluidProperties:GlycolConcentrations` may result in a crash related to their first fields being both extensible and tagged as `\reference`.
 - Text IDF objects whose type names are misspelled are imported under the type name `Catchall`, but the original misspelled name is not retained.

Known Issues Specific to Microsoft Windows

- **OpenStudio RunManager**
 - If you launch the RunManager application from the icon in the Start Menu, there may be problems when trying to run a simulation on an .osm file with the workflow: `modeltoidf -> energyplus`, this case occurs when trying to run this specific workflow on the included example .osm file. Workaround: The simplest workaround is to launch the application from the `<Install Location>\OpenStudio 0.3.0\bin` folder.

Known Issues Specific to Mac

None.

Known Issues Specific to Linux

- **OpenStudio Installer**
 - Linux installer should use `rpath`. If OpenStudio is installed to local directory, binaries will run without setting `LD_LIBRARY_PATH`. Workaround: add `$InstallationDir/lib` to `LD_LIBRARY_PATH`.
- **Qt libpng version**

- Depending on what version of libpng.so is installed, there might be many warnings from programs compiled with Qt (SystemOutliner, ModelEditor, RunManager, ResultsViewer). There is no fix for this problem at this time. Hopefully the next version of Qt will be compiled with a more up to date libpng. This does not seem to affect the correctness of any OpenStudio software; it just causes a large number of warning messages on the terminal.