OpenStudio Version 1.1.0 Build ?????

Release Notes – 10/17/2013

These release notes describe a particular version of the OpenStudio software suite developed by the National Renewable Energy Laboratory (NREL), Electricity, Resources, and Building Systems Integration Center (ERBSIC), Commercial Buildings Research Group, Tools Development Section, and associated collaborators. The notes are organized into the following sections:

* Where to Find OpenStudio Documentation
* Installation Notes
* Overview
* New Features
* Known Issues

# Where to Find OpenStudio Documentation

* OpenStudio release documentation, including these release notes, tutorials, and other user documentation is available at <http://openstudio.nrel.gov/documentation>.
* C++ API documentation is available at <http://openstudio.nrel.gov/sdk-documentation>.
* Measure writing documentation is available at <http://openstudio.nrel.gov/openstudio-measure-writing-guide>
* OpenStudio Life Cycle Costing Examples document is available at <http://openstudio.nrel.gov/openstudio-life-cycle-examples>

# Installation Notes

OpenStudio is supported on Windows XP – 7, OS X 10.7 – 10.8, and Ubuntu 12.04.

## Installation Steps

* Download and install EnergyPlus 8.0.
  + [Download EnergyPlus 8.0](http://apps1.eere.energy.gov/buildings/energyplus/). Create an account and login if you don’t already have one.
  + OpenStudio will work with 32 or 64bit EnergyPlus installers.
* The OpenStudio SketchUp Plug-in requires [Sketchup 8.0](http://help.sketchup.com/en/article/60107) or [SketchUp 2013](http://www.sketchup.com/download) (not available for Linux).
* Create an OpenStudio account, then download and install [OpenStudio](http://openstudio.nrel.gov/downloads).
* Setup a Building Component Library (BCL) account to access online building components and measures. [View instructions on how to setup your account and configure the key in OpenStudio](https://openstudio.nrel.gov/using-building-component-library-bcl-key-openstudio).

## Optional Installation Steps

* For Radiance integration, download and install [Radiance](https://openstudio.nrel.gov/getting-started-developer/getting-started-radiance).
* If you plan to use the OpenStudio SDK Ruby bindings via command prompt on Windows, download and extract [ruby.zip](http://developer.nrel.gov/downloads/buildings/openstudio/src/ruby-1.8.6-msvc.zip) to C:\Ruby (or other desired location), and add C:\Ruby\bin to the PATH environment variable.
* Install the DAKOTA algorithm library as described on the [developer pages](http://openstudio.nrel.gov/getting-started-developer) if you plan to run large-scale analyses with the Ruby bindings.
* Download and install the [32-bit OpenSSL libraries](http://slproweb.com/products/Win32OpenSSL.html) if you will be running simulations remotely through an SSH connection on Windows.

Overview  
  
OpenStudio 1.1.0 adds support for calibration of simulation results with monthly utility data. A new reporting measure type was introduced that has access to input data and simulation results. These can be used to create custom reports and to perform quality control checks. Another major new feature is support for cloud simulation using Amazon EC2 instances. Users first setup an account with Amazon and link it to OpenStudio. At that point users can still run simulations locally or on Amazon. Users pay Amazon directly for cloud time. This is feature is still under development and will continue to improve in future releases. OpenStudio also added support for EnergyPlus 8 and added a number of new HVAC components described in more detail below.

# New Features

## OpenStudio Platform 1.1.0

* Add support for EnergyPlus 8.0.
* Added a new calibration feature that compares monthly utility data to simulation results. Users should use a real year weather file for the best results.
* Added a reporting measure that has access to the EnergyPlus SQL file.
* Added initial implementation of Amazon EC2 support for cloud simulation. This feature is still under development and will see continual performance and stability improvements. Simulations may still be run locally as well.
* Added many additional Energy Conservation Measures to the Building Component Library.

## OpenStudio SketchUp Plug-in 1.1.0

* Improved general performance, stability, and usability.
* Added shading controls for sub-surfaces.
* Added experimental user script to convert SketchUp groups to OpenStudio spaces.

## OpenStudio Application 1.1.0

* Improved general performance, stability, and usability.
* Added Utility Bills Sub-tab in support of new calibration feature.
* New HVAC Components (Contributed by Oak Ridge National Laboratory)
  + GroundHeatExchangerVertical - Enables support for ground source heat pumps EvaporativeFluidCoolerSingleSpeed.
  + AirTerminalSingleDuctVAVNoReheat
  + AirTerminalSingleDuctConstantVolumeReheat
* New HVAC Components (Contributed by Group 14)
  + In-slab radiant heating/cooling, including water and electric resistance.
  + Chilled beams, both passive and active.
* Simplified measures library to show OpenStudio, EnergyPlus, and new Reporting measures side by side.
* Added calibration view to Results tab to view utility data side by side with simulation results.

## OpenStudio ParametricAnalysisTool 1.1.0

* Simplified measures library to show OpenStudio, EnergyPlus, and new Reporting measures side by side.
* Added Cloud Settings, Cloud Monitor, and a diagnostic dialog in support of Amazon EC2 simulations. Once the user creates an Amazon account and links to it from OpenStudio, OpenStudio can start and end EC2 instances.
* The Run tab was redesigned in support of Amazon EC2 simulations. This includes a number of new interface elements and characteristics described below
  + A button to display and alter the cloud state.
  + Design alternatives can now be selected and deselected. This can be accomplished by clicking on the individually, or by using the “Select All” and “Clear Selection” buttons. In the past there was no selection mechanism, and all design alternatives had to be run.
  + When cloud is on there is a new column to choose which design alternatives detailed simulation results are requested for. You can select these individually or select all.
  + There is a similar functionally to individually or globally clear simulation results.

## OpenStudio RunManager 1.1.0

* No changes.

## OpenStudio ResultsViewer 1.1.0

* No changes.

## OpenStudio Ruby Bindings 1.1.0

* No changes.

## OpenStudio C# Bindings 1.1.0

* No changes.

## OpenStudio Python Bindings 1.1.0

* Added experimental bindings.

## OpenStudio JavaScript V8 Bindings 1.1.0

* Added experimental bindings.

# Known Issues

The following are issues known at the time of publication of these release notes. Please contact [openstudio@nrel.gov](mailto:openstudio@nrel.gov) if you require further assistance.

## Known Issues Common to All Platforms

### OpenStudio SketchUp Plug-in

* 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 perform a copy multiple procedure on groups or spaces, 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. [bug 36]
* Using SketchUp’s undo operation on OpenStudio model elements may produce unexpected results. [bugs 438 and 797]
* SKP and OSM link is not maintained when files are relocated. You can manually re-establish that link. When opening a SketchUp file Launch SketchUp and then Open the SketchUp file. If that doesn’t work you can also directly load the OSM file, bypassing the SKP file. [bug 61]
* It is possible for the OpenStudio Plug-in to conflict with other SketchUp plug-ins. If you suspect this is a problem, try testing with other plug-ins disabled, or contact openstudio@nrel.gov for assistance. [bug 24]
* Importing Constructions and Import Schedules from the OpenStudio SketchUp Plug-in are broken, but you can load an OSM file as library in the OpenStudio application and then selectively drag specific objects into your model. [bug 930]
* Using “Intersect” in the surface matching dialog can result in a crash or unexpected result. This is more common with models that were imported from other CAD formats at some point in the workflow. It is a good idea to save prior to using this to avoid any loss of data. This is related to an underlying SketchUp bug. [bugs 856 and 1220]
* “Project Loose Geometry” can crash SketchUp. It is a good idea to save prior to using this to avoid any loss of data. [bug 1221]
* If your OpenStudio model crashes SketchUp or has unexpected behavior please forward it to [OpenStudio@NREL.gov](mailto:OpenStudio@NREL.gov) with a description of the problem. Please also include the directory that has the same name as the OSM file. You can attach it as a zip file. [bug 1231]

### OpenStudio Application

* When going to the Site / Utility Bills subtab after setting up the prerequisite objects you will see an object that can’t be edited. That isn’t a real object. To add your first object switch away from the “Electric Utility Bill” category at the left, and then click the green “+” to create a new object.
* The Site / Utility Rates subtab the workflow are marked as “coming soon,” and will be completed in an upcoming release of OpenStudio.
* To enable set point schedule drop zones on the Thermal Zones tab, you need to first turn on the thermostat.
* Using the mouse scroll wheel while hovering over graphics in the Results Summary tab will unintentially zoom them in and out. [bug 574]
* Similar thermostats assigned in the SketchUp Plug-in are shared across thermal zones in the OpenStudio application. Changing or turning off one will do the same to others. [bug 722]
* The view does not always refresh correctly when you delete a material from a construction. If you still see a material after clicking the “x”, switch away from and back to the object to refresh the view. [bug 925]
* Not all of the schedules required to make a valid People object can be assigned in the application. [bug 664]
* The 3-phase daylighting simulation method is currently inoperable due to a fundamental change in the way the lighting calculation points are passed to Radiance, and will be updated in an upcoming release of OpenStudio. [bug 943]

### OpenStudio ParametricAnalysisTool

* PAT won’t prevent you from loading OSM files that are from a newer version of OpenStudio than you have installed, but the analysis won’t run. [bug 1240]
* Daylighting control object variables can’t be requested in the output variables tab. [bug 1290]
* The results tab may not be legible on a 1024x768 screen. [bug 1295]
* Adding a design alternative using measure groups will remove any design alternatives made from external files. You can however add a design alternative made from external files without losing design alternatives made from measure groups. [bug 1236]
* Always Run measures are applied to externally constructed design alternatives. This may result in unexpected results or errors.
* Measures specified within externally constructed design alternative models are not applied.

### OpenStudio ResultsViewer

* Alias changes do not update in table view until the data are read in again. [bug 7]
* Data sets are expected to start on January 1 or later, and end on December 12 or earlier. Run periods cannot wrap around the end or beginning of the year. [bug 78]
* Table view column rearrangements are not preserved. [bug 34]

### OpenStudio RunManager

* EnergyPlus ForwardTranslator errors do not appear in the RunManager GUI elements. [bug 897]

### OpenStudio Platform, Including SWIG Bindings

* IdfObject::getQuantity and IdfObject::setQuantity functionality is almost, but not completely, comprehensive. The quantity getters and setters for fields whose units are “BasedOnField AX” are not expected to work at the IdfObject level, but are to be handled only for OS: prefixed objects by the specific interfaces of classes derived from ModelObject.
* The default naming scheme of WorkspaceObject (base class for ModelObject, etc.) sometimes results in undesired name clashes when transferring objects between models, including in the EnergyPlus translators. Therefore, some objects may be unexpectedly renamed or copied.
* OpenStudio::Model::ComponentVector objects may be inaccessible from the Ruby bindings. [bug 1005]

## Known Issues Specific to OS X

* To Install OpenStudio 1.0 correctly on OS X you need to first uninstall earlier versions of OpenStudio. [bug 1303]
* At this time, we are unable to provide simple installation instructions for DAKOTA on OS X. We are working with the DAKOTA team to be able to provide this sometime in 2013. [bug 437]
* The SketchUp Plug-in toolbar tooltips do not work correctly on OS X if you have made your toolbars horizontal. The tooltips never show on OS X in the status bar. The button state may also be incorrect. This is a bug in SketchUp versus the plug-in. [bug 375]

## Bug Analytics Since Previous Release

* 89 new bugs were filed since April 1st 2013.
* 51 bugs were closed since April 1st 2013.