OpenStudio Version 2.5.0

Release Notes – 3/30/2017

These release notes describe version 2.5.0 of the OpenStudio software suite developed by the National Renewable Energy Laboratory (NREL), Buildings and Thermal Systems, 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

Where to Find OpenStudio Documentation

- OpenStudio release documentation, including these release notes, tutorials, and other user documentation, is available at https://www.openstudio.net/.
- C++ API documentation is available at https://openstudio-sdk-documentation.s3.amazonaws.com/index.html.
- Measure development documentation is available at http://nrel.github.io/OpenStudio-user-documentation/reference/measure_writing_guide/.

Installation Notes

OpenStudio is supported on Windows 7 – Windows 10, OS X 10.10 – 10.11, and 64-bit Ubuntu 14.04.

OpenStudio 2.5.0 supports EnergyPlus Release 8.9.0, which is bundled with the OpenStudio installer. It is no longer necessary to download and install EnergyPlus separately. Other builds of EnergyPlus are not supported by OpenStudio 2.5.0.

OpenStudio 2.5.0 supports Radiance 5.0.a.12, which is bundled with the OpenStudio installer; users no longer must install Radiance separately, and OpenStudio will use the included Radiance version regardless of any other versions that may be installed on the system. Other builds of Radiance are not supported by OpenStudio 2.5.0.

Installation Steps

- The OpenStudio SketchUp Plug-in requires SketchUp 2017 (not available for Linux). The OpenStudio SketchUp Plug-in does not support older versions of SketchUp.
- Download and install OpenStudio. Select components for installation.
- 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.

For help with common installation problems please visit, http://nrel.github.io/OpenStudio-user-documentation/help/troubleshooting/.

Overview

OpenStudio SDK:

OpenStudio now includes the generic AdditionalProperties object that can be used to apply user-defined properties to objects in the OSM. These properties do not directly change the model in any way nor are they forward-translated to EnergyPlus. Rather they can be used by measures to apply logic.

OpenStudio also now includes the Kiva foundation heat transfer calculation tool, a two-dimensional finite difference approach for determining convective heat gains and temperatures for foundation surfaces.

All Energy Management System (EMS) actuators and sensors are now available in the OpenStudio SDK through the methods emsActuatorNames() and emsInternalVariables().

ExteriorFuelEquipment, ExteriorWaterEquipment, and their associated definition objects (ExteriorFuelEquipmentDefinition, ExteriorWaterEquipmentDefinition) have been added to OpenStudio. All exterior equipment, including the existing ExteriorLights (and ExteriorLightsDefinition) now have the same parent classes: ExteriorLoadInstance and ExteriorLoadDefinition.

Preliminary support for the EnergyPlus AirflowNetwork feature is now provided in OpenStudio. Envelope leakage and core elements of distribution networks are supported. Changes are expected to support ongoing enhancements of the AirflowNetwork model (e.g. multiple air loops).

OpenStudio Server:

OpenStudio Server has been updated addressing several issues with simulations not completing or running indefinitely.

OpenStudio Standards:

Added initial support for the CA DEER Prototype buildings. Refactored codebase to make the addition of new standards easier and more isolated from other code. Added support for additional HVAC systems that can be used for model articulation.

Issue Statistics Since Previous Release
- TBD new issues were filed since the 2.4.0 release of OpenStudio (not including opened pull requests).
- TBD issues were closed since the 2.4.0 release of OpenStudio (not including closed pull requests).