OpenStudio Version 3.6.0-rc1

Release Notes - Release planned for 05-12-2023

These release notes describe version 3.6.0 of the OpenStudio SDK developed by the National Renewable Energy Laboratory (NREL), Buildings and Thermal Sciences Center, Commercial Buildings Research Group, Tools Development Section, and associated collaborators. The notes are organized into the following sections:

- Overview
- Where to Find OpenStudio Documentation
- Installation Notes
- OpenStudio SDK: Changelog

Overview

As of April 2020, development and distribution of the OpenStudioApplication and the SketchUp plugin have transitioned to the OpenStudio Coalition, who is independently managing and distributing the software through its own openstudiocoalition/OpenStudioApplication repository. The OpenStudio SDK is continuing to be actively developed and distributed by NREL and is released two times per year, through a spring and a fall release.

Below is the list of components that is included in this SDK installer:

OpenStudio SDK 3.6.0 - EnergyPlus - Command Line Interface (CLI) - Radiance - Ruby API - C++ SDK

Note that PAT is not included in either the SDK or the OpenStudio Coalition's Application installers. You will need to install PAT separately which is distributed on the OpenStudio-PAT GitHub page.

Where to Find OpenStudio SDK Documentation

- OpenStudio SDK 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/
- A roadmap for planned features is available at http://nrel.github.io/OpenStudio-user-documentation/getting_started/roadmap/.

Installation Notes

OpenStudio SDK 3.6.0 is supported on:

- 64-bit Windows 7 – 11
- macOS: 10.15+ x86_64, 12.1+ arm64
- Ubuntu: 20.04 x86_64, 22.04 x86_64, 22.04 arm64
- Centos7

OpenStudio SDK 3.6.0 supports EnergyPlus Release 22.1.0, 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 SDK 3.6.0.

OpenStudio SDK 3.6.0 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 SDK 3.6.0.

As usual, you can refer to the **OpenStudio SDK Compatibility Matrix** for more information.

Installation Steps

- Download and install OpenStudio SDK and/or openstudiocoalition/OpenStudioApplication depending on your needs. Select components for installation. Note that OpenStudio Application is a standalone app and does not require you to install OpenStudio SDK.
- 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.
- The OpenStudio Application SketchUp Plug-in requires SketchUp 2021-2022 (not available for Linux). The OpenStudio Application SketchUp Plug-in does not support older versions of SketchUp. SketchUp must be installed before OpenStudio Application to automatically activate the plugin. If you install SketchUp after OpenStudio Application, simply re-run the OpenStudio Application installer.

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

OpenStudio SDK: Changelog

The 3.6.0 is a major release. This update includes several new features, performance improvements, and bug fixes. You can find the list of Pull Requests that got into this release here.

Python Bindings

As of OpenStudio SDK 3.2.0, Python bindings are officially supported and distributed through Python Package Index (PyPI). To install, users will need to have Python3 installed along with pip and simply run the following command in a terminal window.

```
pip install openstudio==3.6.0
```

Please see openstudio on PyPi for further instructions on how to install. Users can also visit the test channel at openstudio on TestPyPi to install development bindings.

You can also refer to the OpenStudio SDK Python Binding Version Compatibility Matrix to see the list of supported platforms and python versions.

New Features, Major Fixes and API-breaking changes

- Support Ubuntu 22.04 and remove 18.04
- #4778 - Wrap AirConditioner:VariableRefrigerantFlow:FluidTemperatureControl and AirConditioner:VariableRefrigerantFlow:FluidTemperatureControl:HR
    - `ZoneHVAC:TerminalUnit:VariableRefrigerantFlow` has API-breaking changes related to setters and getters for its heating and cooling coils. They now use `HVACComponent` instead of the more restrictive `CoilHeatingDXVariableRefrigerantFlow` and `CoilCoolingDXVariableRefrigerantFlow`.
    - `AirConditionerVariableRefrigerantFlow::clone` was changed to stop cloning the child `Curve` objects (20 of them)
- #4740 - Fix issues around `ScheduleFixedInterval`, with A minor API breaking change: `intervalLength`/`setIntervalLength` now return/accept an `int` rather than a `double` to conform to the IDD type `\integer`
- #4813 - Wrap `SolarCollectorPerformance:PhotovoltaicThermal:BIPVT`
    - `SolarCollectorFlatPlatePhotovoltaicThermal` has API-breaking changes in the `solarCollectorPerformance` getter due to the addition of this new object: it used to return a `SolarCollectorPerformancePhotovoltaicThermalSimple` (the only performance object at the time), now it's a `ModelObject`.

Minor changes and bug fixes

- #4828 - Fix Space load-based actuator for spaces are named based on thermal zone name
    - As part of this PR, the optional field at the end `Zone Name` is replaced with `Zone or Space` and some API changes are there around it. The

only minor breaking one is that `boost::optional<ModelObject>`
`zoneName()` (deprecated) will now return either a Zone or a Space.
Before if you called setSpace it would store the space's ThermalZone,
now it stores the Space itself. This is unlikely to affect most users.

Deprecated methods removed:

Developer changes:

Full Changelog: https://github.com/NREL/OpenStudio/compare/v3.5.1. . . v3.6.0

New Contributors:

OpenStudio Standards v0.4.0

- #1475 Fix issue #109 check hard-sized values before autosized values
- #1474 Fix issue #238 space_type_apply_internal_loads to return boolean
  instead of nil when no infiltration data available
- #1473 Add more descriptive warning messages for missing standards space
  type, to help with issue #516
- #1470 Fix issue #1466 by adding a version reference for initialization
  summary lookup
- #1447 Fix issues #1446 and #1395 breaking out lighting controls into
  individual spaces
- #1437 Fix issue #754 add support for HeatExchangerFluidToFluid objects
  for heating and cooling fuels
- #1436 Fix issue #230 improve PRM baseline boiler naming
- #1435 Fix issue #1423 typo in find_and_set_insulation_layer method
- #1428 Appendix G PRM bug fixes, including unmet hour load loop, error
  handling, and schedule type checking with EMS
- #1422 Fix issue #1417 add default chiller efficiency
- #1421 Fix issue #1326 add model argument to create_cubic_curve and
  create_curve_exponent
- #1418 Fix issue #1228 OS_AirLoopHVAC_UnitarySystem typo in heating
  and cooling fuels system lookup
- #1414 Update DEER ventilation rate assumptions
- #1410 Remove obsolete OpenStudio model object autosizing and hardsizing
  methods

OpenStudio Server 3.6.0

Issue Statistics Since Previous Release