

Introduction to EnergyPlus Software Requirements

Last updated for EnergyPlus v7.2, November 2012

(Items highlighted in yellow are required in order to complete the exercises.)

A computer will be required for all class participants for use during the EnergyPlus workshop. This document lists software to be installed prior to the workshop and instructions for testing the EnergyPlus install. Please install and test the software in the order listed below to ensure a successful workshop.

1. Install EnergyPlus

Participants are expected to have the latest version of EnergyPlus (Version 7.2.0.006, released October 2012) installed on their computer prior to arriving at the workshop. You may register for this software at

<http://www.energyplus.gov>.

This will send you the password and take you to a download page for the version 7.2.0.006 installer.

Note if you have an earlier version of EnergyPlus installed on your machine, you may leave the older version in place. Each release of EnergyPlus installs into a different folder.

Notice for Apple Mac Users

At the present time, the Mac version of EnergyPlus is a subset of the Windows version and only runs on Intel-based Macs. The Mac version includes the EnergyPlus simulation engine and an interface to select input files and run a simulation. The Windows version of EnergyPlus includes additional utilities such as EP-Launch and IDF Editor which do not currently have Mac equivalents. The workshop exercises assume that you have EP-Launch to simplify opening output files and IDF Editor to simplify editing EnergyPlus input files. If you will be using a Mac for this workshop, you have the following options:

1. If you have a virtual Windows machine on your Mac (using VM Fusion or Parallels or similar), then install the Windows version of EnergyPlus. This will allow you to work the exercises as written.
2. If you do not have a virtual Windows machine installed on your Mac, you will find the exercises challenging to accomplish in a text editor. The exercises based on the OpenStudio plugin for Google SketchUp will work with the native Mac applications. For the remaining exercises, you may use the provided solution files to read the various input objects that

correspond to the steps of the exercises, run the solution files using Mac EnergyPlus and review output files.

2. Install Legacy OpenStudio Plugin for SketchUp

Legacy OpenStudio is a free plugin for the SketchUp 3D drawing program. The plugin makes it easy to create and edit the building geometry in EnergyPlus input files. The plugin also allows you to launch EnergyPlus simulations and view the results without leaving SketchUp.

2a. Install or Update Trimble SketchUp

Legacy OpenStudio requires SketchUp 7 or later, Free or Pro version, on Windows XP/Vista/System 7 or Mac OS X 10.5+. SketchUp 8 is recommended, but OpenStudio will work with SketchUp 7. If you do not already have SketchUp installed, you must install this **before** installing the OpenStudio Plugin. SketchUp may be found at <http://sketchup.google.com>

2b. Install or Update Legacy OpenStudio Plugin

The workshop requires that you have the latest version of the Legacy OpenStudio Plugin (Version 1.0.9, Updated October 2012, or later). You may download the Legacy OpenStudio installer at

<http://www.energyplus.gov/openstudio.cfm>

Note: When installing the plugin, be sure the install path is consistent with your version of SketchUp (i.e. \SketchUp 7 or 8)

Note: If you have installed Legacy OpenStudio with a previous version of EnergyPlus, in SketchUp select Plugins → Legacy OpenStudio → Preferences and make sure the EnergyPlus Engine path points to ..

\EnergyPlusV7-2-0\EnergyPlus.exe

The exact location will depend on where you installed EnergyPlus. The default path is C:\EnergyPlusV7-2-0\.

3. Test EnergyPlus

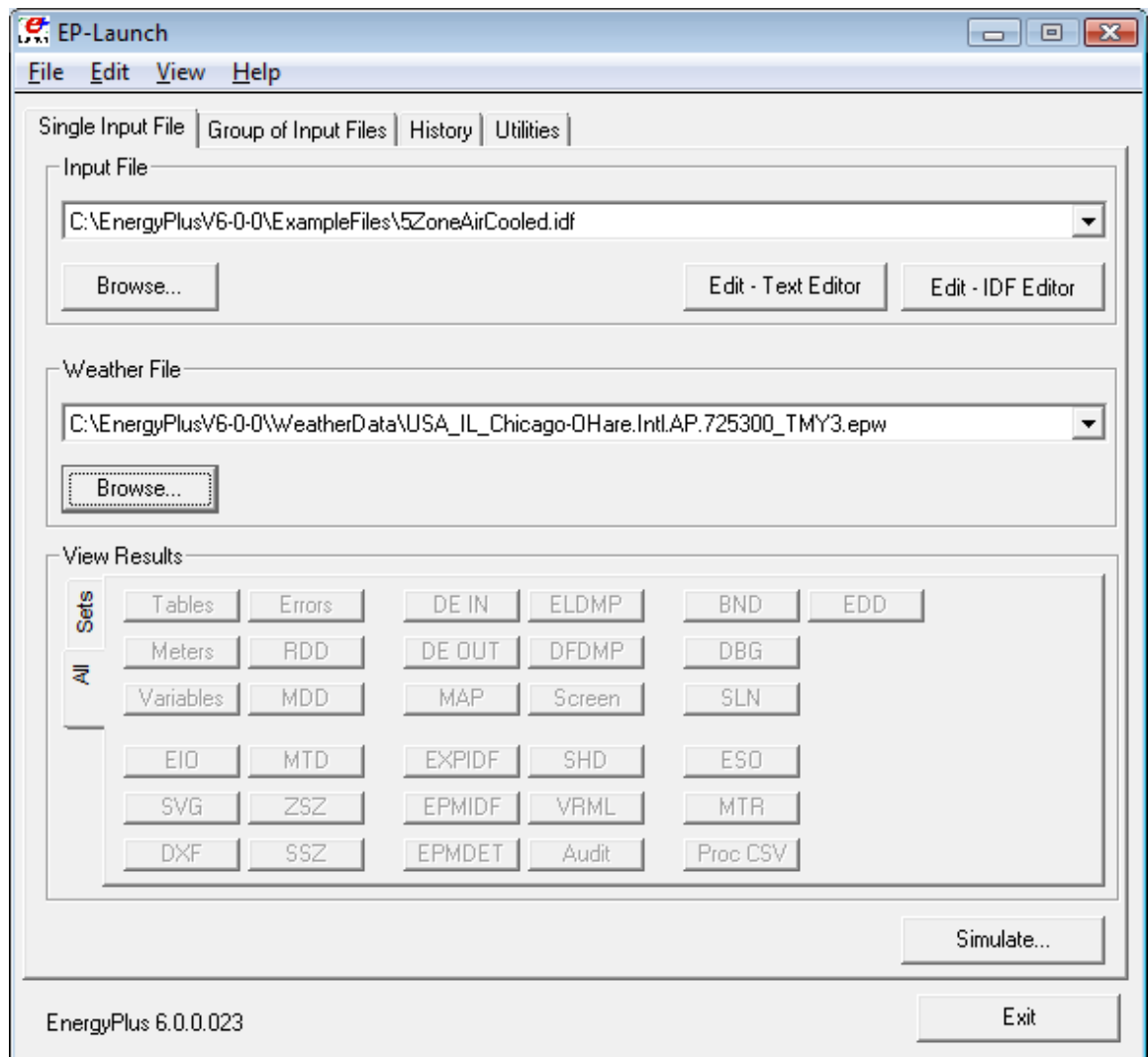
Some users may encounter problems during installation and/or when running EnergyPlus due to operating system or organizational security restrictions. The following instructions are specific to the Windows version of EnergyPlus, but it is recommended that users of the Macintosh version perform a similar test.

The default install path for the Windows version of EnergyPlus is C:\EnergyPlusV7-2-0. The Windows version of EnergyPlus creates a temporary run folder at the location of the input file being simulated, and this folder must have full read/write/execute permission. On some systems it may be necessary

to change the install path to a folder in your user area to ensure adequate file permissions. Or it may be sufficient to locate all input files in an area with appropriate file permissions. You may need to consult your network administrator for guidance.

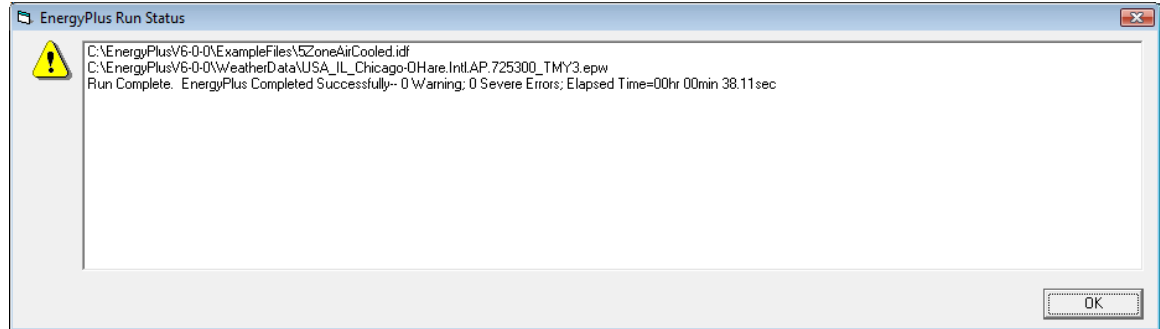
Once EnergyPlus is installed, please run a simple test to avoid problems at the workshop:

1. Open EP-Launch.exe. This may be accessed from Start→All Programs→EnergyPlusV7-2 Programs or by opening the EnergyPlusV7-2-0 file folder.



2. Browse to select an input file. You may select any one of the example files found in EnergyPlusV7-2-0\ExampleFiles
3. Browse to select a weather file from EnergyPlusV7-2-0\WeatherData
4. Press the "Simulate" button.

5. If the simulation runs successfully, you should see a dialog box similar to this



6. If an error dialog pops up regarding “batch” or “.bat” files, then reopen EP-Launch, go to the View→Options... menu and select “Miscellaneous”, uncheck the box labeled “Create batch file to run EnergyPlus, then click OK. Try to run a simulation again.
7. If you encounter other errors and do not get a successful simulation, please consult your network administrator to grant the required file permissions. If the administrator has questions, please direct them to EnergyPlus-Training@gard.com

5. Other Software

Other software that you should install or have on your computer in advance include:

- **Adobe Reader** 8.1 or later to view the PDF files. Version 7 will work, but 8 or higher is recommended (<http://get.adobe.com/reader/>),
- A **text editor** such as WordPad or Notepad to edit input files and view text output files. Text editors such as UltraEdit, TextPad, and PFE are a useful upgrade, but not necessary.
- A **spreadsheet program** such as Excel to view CSV formatted output files,
- A **web browser** to view HTML formatted output files,
- An **SVG viewer**. *EnergyPlus produces a block diagram of the HVAC system in SVG format.*

Internet Explorer 9 or above will open svg files directly

Adobe SVG Viewer plugin for the Internet Explorer web browser
(<http://www.adobe.com/svg/viewer/install/>)

Note: right-click for zoom and others; hold <Alt> and drag to pan drawing.

Or Inkscape, an SVG editor (<http://www.inkscape.org/>)

Both of the last two options are free downloads. Neither one is a perfect solution.

■ **OPTIONAL: xESOview**

to view and plot hourly or detailed output variables directly from the EnergyPlus ESO output files (<http://xesoview.sourceforge.net/>), free download (Windows only).

■ **OPTIONAL: 3-D DXF Viewer**

EnergyPlus can produce a DXF output file showing the building geometry. Alternatively, EnergyPlus geometry can be displayed using OpenStudio. If you wish to view DXF output, and you do not have other software which can read DXF files, then install one of these . . .

eDrawings Viewer (<http://www.edrawingsviewer.com/>) 15.3MB Free viewer from SolidWorks. Note default install path is c:\Program Files\Common Files\eDrawings 2011\ (may be needed to set options in EP-Launch).

Bentley View V8i (<http://www.bentley.com/en-US/Products/Bentley+View/>) 400MB in 2 parts (there are many files to choose from, suggest the “V8i” options)

Autodesk VoloView Express (<http://www.gard.com/vve201setup.exe>) 23.4MB (Windows only). This free viewer for viewing DXF files is no longer available from AutoDesk but the license terms allow us to make it available. On some newer operating systems this program no longer runs.

4. EP-Launch and IDF Editor Tutorials

If you do not already know how to use EP-Launch and IDF Editor, please view these tutorials:

<http://www.youtube.com/user/GARDAnalytics>

Please direct questions to EnergyPlus-Training@gard.com