

Sphinx SD Tools User Guide

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Introduction

The Sphinx project is dedicated to create common accessible environment for system dynamics simulation. This software is developed on Java 5 platform and use Java Swing GUI.

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1 Installation and Starting

1.1 Prerequisites

In order to use Sphinx SD Tools project you should fulfil following requirements:

- Java Runtime Environment. This software was developed using Java 6 platform, but it should work with Java 5 Standart Edition. If you have no Java Runtime Environment installed at your system, please download latest from <http://www.java.com/>
Please note, that if you will use source distribution of Sphinx SD Tools project you will need not the Java Runtime Environment but Java Development Tools that you can get from <http://java.sun.com/javase/downloads/index.jsp>
- If you will use source distribution of Sphinx SD Tools project then you will need build tool Ant that you get here <http://ant.apache.org/bindownload.cgi>

1.2 Downloading

You have an option to download two types of Sphinx SD Tools bundles:

- Binary Distribution. This is ready to use bundle that will be suitable for most users, not developers. You can get the latest version of project at http://sourceforge.net/project/showfiles.php?group_id=177480 and select to download file that does not contain 'src', for example: `sphinxes_0.3a.zip`
It is tagged with `.zip` type.
- Source Distribution¹. This bundle contains all the source code of Sphinx SD Tools project. You will need it if you want to contribute to project or may be watch how it works. Example of a file name is: `sphinxes_0.3a-src.zip`

¹The Source distribution is actually Eclipse JDT project.

1.3 Installation

After you downloaded Sphinx SD Tools distribution you should unpack it into directory which path name does not contain any space characters and characters other than in latin charset. For example unpack file `sphinxes_0.3a.zip` onto directory `c:\sphinxes`. So file `sphinxes_0.3a.jar` will be accessible at path `c:\sphinxes\sphinxes_0.3a.jar`. If you are using source distribution of Sphinx SD Tools you will need to do some more complicated steps:

- Make sure you downloaded and installed Ant build tool, see 1.1.
- Make sure that JDK and Ant bin files are in PATH. You can test it by typing `javac` and `ant` in terminal (or command line) window and watch program output messages.
- Now you are ready to prepare source distribution to be ready for use at development time. This is necessary because Sphinx SD Tools assumes special folder structure and format for external functions and model templates². Just run command:

```
ant build-develop
```

and for wait it successful finish.

Also you are able to create binary distribution of Sphinx SD Tools by running command:

```
ant build-release
```

After that binary distribution may be found at `build` subdirectory of Sphinx SD Tools installation directory.

1.4 Starting

Now you are ready to start an application, so you have the following options:

- If you running MS Windows then just run file `run.bat` from the installation directory.
- If you running some *nix system then you should for the first time run command in the terminal:

```
chmod a+rx run.sh.
```

Next times you will need to start Sphinx SD Tools just run:

```
./run.sh
```

 within installation directory.

²Please note that when you will made any changes to templates, functions or native properties files you will need to repeat this step.

2 Known Issues

1. I've started project, main window apperread, but I cannot create or open any project.
Make sure that installation directory does not contain any space charachters or characters not in latin charset as shown in 1.3

3 Support

Support questions, bug reports and other questions can be posted at Sphinx SD Tools forums at

https://sourceforge.net/forum/?group_id=177480

4 Documentation

4.1 Sphinx SD Tools User Manual

Under development

4.2 Sphinx SD Tools System Dynamics Tutorial

Under development

5 Dependencies

Here listed all the developments we use in Sphinx SD Tools project with short descriptions, site references and licensing information:

- JDK 1.5.0 or higher - Sphinx SD Tools depends on some Java 5 specific Collections API.
- JavaCC - a parser/scanner generator.

JavaCC is licensed under the terms of the Berkeley Software Distribution License.

JavaCC is not part of this distribution because it is not necessary for changing the source code. You only need it if you want to change the node formula parser.

You can find out more about JavaCC and/or download the latest version from:

<http://javacc.dev.java.net>

- JGraph - powerful, lightweight, feature-rich, and thoroughly documented open-source graph component available for Java.
<http://www.jgraph.com>
JGraph is licensed under the terms of the following licenses: BSD License, GNU General Public License (GPL), GNU Library or Lesser General Public License (LGPL)
JGrapg is used for visual system dynamics model editor.
- JChart2D - easy to use component for displaying two-dimensional traces in a coordinate system. It is pretty fast and best fits for real-time chart drawing.
<http://jchart2d.sourceforge.net/>
JChart2D is licensed under the terms of GNU Library or Lesser General Public License (LGPL).
JChart2D is used to draw execution charts for system dynamics model that visualize the process of model executing.
- Log4j - debugging tool, written in Java, which logs statements to a multiple destinations.
<http://logging.apache.org/log4j>
Log4j is licensed under Apache License, Version 2.0.
- XStream - is a simple library to serialize objects to XML and back again.
<http://xstream.codehaus.org/>
XStream is licensed under a BSD license.