Polychrony: Signal ToolBox / Signal GUI install

Before installing the components, read the License terms and check the availability of Required software. The installation and use of the components suppose the agreement to the license. To get the source files and build your own toolset (SRC), you must proceed to the toolset Extraction and Installation, and then setup the toolset Access. You may also download an available Binary version (BIN) without the source code.
This notice primarily describes the commands for Unix system in a command window (the commands are almost the same in a Windows command window).

A detailed Documentation is available and can be partially rebuilt (DOC). An online user documentation is provided by the Signal GUI.

POP platform: The interface of the Signal ToolBox for POP (Polychrony on Polarsys Eclipse platform) is included in the Signal ToolBox component. To use the Signal ToolBox under POP, install it.

1) License (BIN+SRC)

Signal ToolBox and Signal GUI are free software under the GNU General Public License, version 2. According to the license terms any user must have access to the source code, even if you (re)distribute the original or a modified binary version.

2) Required software (BIN+SRC+DOC)

(SRC+BIN) The following software are required and not provided to build a Polychrony environment:

(!)☞ cmake
- tcsh (all Unix based OS)

(SRC) The following software are required and not provided to build the executable files from the source files:

- C and C++ ANSI compilers (GCC or other)
- JDK version 1.2.2 or more (for Signal GUI)

(DOC) The following external software are required and not provided to build the technical documentation:

- doxygen
- pdflatex, makeindex

(SRC+BIN) The following external software are required and not provided to use the corresponding outputs of the Signal ToolBox:

- Graphviz for displaying graphs described in XX.dot files
- Lustre for XX.lus files (coming soon)
- **C, C++, Java compilers** for XX.c, XX.cpp, XX.java output files
- Syndex for automatic code distribution of XX.sdx files

(SRC+BIN) The following companion software are required to use the corresponding outputs of the Polychrony toolset; they can be downloaded at this Polychrony site.

- SSME, the Eclipse frontend, for loading XX.ssme files
- Signal GUI, the Signal Graphical User Interface, for XX.gpk and XX.sig files
- Signal Toolbox for XX.sig files
- Sigali for XX.z3z files

3) *Extraction (SRC+BIN)*

- The Signal ToolBox is provided as a compressed archive file (**PolychronyToolset-SignalToolBox<Version><Suff>.tar.gz**) that contains a root directory called PolychronyToolset_<Version> (where <Version> is the version of the Polychrony toolset). After an appropriate extraction[1] in XXX directory, you should get PolychronyToolset_<Version> as a subdirectory of XXX.

SRC+BIN	***Unix, MacOs*** **gunzip PolychronyToolset-SignalToolBox<Version><Suff>.tar.gz** **tar xvf PolychronyToolset-SignalToolBox<Version><Suff>.tar**

- The Signal GUI (it must be uncompressed after the Signal ToolBox) is provided as a compressed archive file (**PolychronyToolset-SignalGUI<Version><Suff>.tar.gz**) that contains a root directory called SignalGUI. This archive must be uncompressed in the PolychronyToolset_<Version> directory. If the Signal ToolBox is already installed, the Installation must be re-applied.

SRC+BIN	***Unix, MacOS*** **cd PolychronyToolset_<Version>** **gunzip PolychronyToolset-SignalGUI<Version><Suff>.tar.gz** **tar xvf PolychronyToolset-SignalGUI<Version><Suff>.tar**

4) *Installation (SRC+BIN)*

❗☞ Make sure that the system variable “pK_ROOT” is unset.

To install the extracted Signal ToolBox first configure your own distribution (SRC+BIN) and then generate the executable files (SRC):

- Configure (SRC+BIN): after unpacking the archive, move to the PolychronyToolset_<Version>/cmake sub-directory, execute the command
  - **cmake ..** for Unix/MacOs,
  - **cmake .. -G "NMake Makefiles"** for Windows

[1] For windows, you can use a tool such that izarc (http://www.izarc.org/) to uncompress the archive.

SRC+BIN	***Unix, MacOS*** **cd PolychronyToolset_<Version>/cmake** **cmake ..**
	Windows **cd PolychronyToolset_<Version>\cmake** **cmake .. -G "NMake Makefiles"**

- Generation (SRC): after configuring, move to the PolychronyToolset_<Version> directory and execute the command “makePolychronyToolSet”

SRC	**cd ..** **makePolychronyToolset**

- To rebuild the documentation execute the following command line in the same directory:

SRC	**makePolychronyToolset doc**

5) *Access (SRC+BIN)*

Before using the Signal ToolBox first execute the following setup command in a fresh command window:

SRC+BIN	***Unix, MacOS in a tcsh session*** **source PolychronyToolset_<Version>/PolychronyToolset_setup**
	Windows **call PolychronyToolset_<Version>\PolychronyToolSet_setup.bat**

A short description is given by the command:

```
signal -h
```

To use the Signal GUI execute the command **polychrony** and read the online user documentation.

```
polychrony
```

6) *Installation testing*

Verify that the toolbox is correctly installed by testing your new Signal compiler: execute the command **signal** with appropriate parameters and options (**signal -h** to get the list of parameters and options). Some examples provided in the PolychronyToolset_<Version>/Examples directory (each directory contains a AAREADME file) can be used for the test.

For the Signal GUI, run the **polychrony** command. Some examples provided in the PolychronyToolset_<Version>/Examples directory) can be used for the test.

7) Documentation (SRC+BIN)

All the user documentation related to the Polychrony toolset including Signal ToolBox is available on the distribution site. This includes a general presentation of the Polychrony toolset architecture.

The source documentation (SRC only) is recursively accessible from:

Unix, MacOS **PolychronyToolset_<Version>/doc/html/index.html**
Windows **PolychronyToolset_<Version>\doc\html\index.html**

8) Uninstall

Simply delete the **PolychronyToolset_<Version>** directory.

9) Error messages

When the pK_ROOT is set, the installation may failed. The cmake command cannot produce a correct setup (**PolychronyToolset_setup file).** To solve this problem, unset this shell variable and rerun the installing.

The cmake command fails when a required software (compiler) is not found.

10) Contacts

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