

VipTool 6.0.3 User Guide

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1 Getting started

You can download the latest VipTool version from our department homepage:
http://www.fernuni-hagen.de/sttp/forschung/vip_tool.shtml.

VIP Tool



A partial order based tool for modelling, simulation, validation and verification of place/transition Petri nets

VipTool is a tool for modelling, simulation, validation and verification of systems using place/transition Petri nets (p/t-nets). It implements the research done in a project named VIP (Verification of Information systems by evaluating partially-ordered Petri net runs) that was sponsored by the German Research Society (DFG). The main concern of this project is to establish a simulation and modelling concept for business processes given by Petri nets, which is based on the generation and evaluation of partially ordered execution runs (processes) instead of totally ordered sequences of transition occurrences. VipTool provides a comprehensive bundle of methods concerned with causality and concurrency modelled by partially ordered runs of p/t-nets. Namely, functionalities for synthesis, unfolding (combined with respective validation) and testing of executability are covered by VipTool.

Downloads

Releases

- [VipTool](#) (6.0.3). Requires at least [Oracle Java 7](#).

Branches

There are other projects based on the VipTool Editor:

- [MuPSj](#) - a Multitouch Petrinet Simulator for interactive creation and simulation of Petri Net
- [AMSEL](#) - a platform which supports the learning and creation of algorithms

There are also versions developed during courses and theses:

- [Troynet](#) - an editor for faithful Petri nets, complying with; Reisig, Wolfgang; Petrinetze, Modellierungstechnik, Analysemethoden, Fallstudien, Wiesbaden 2010.

Examples

- >> [Test Languages](#) for the ToPNoC article "Comparison of Different Algorithms to Synthesize a Petri Net from a Partial Language".
- >> [Insurance Examples](#)

Note: To run the examples, just unzip the file to a directory and open the project file (*.prj) with the vipool 'Load Project' menu entry.

Figure 1: VipTool Homepage

Please download *VipTool*, *Test Languages* and *Insurance Examples* from this page and unzip the three zip-files.

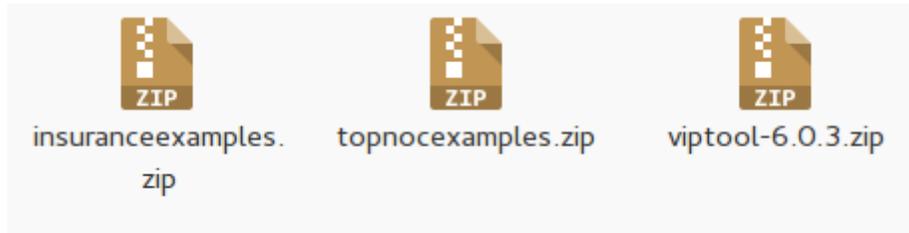


Figure 2: *VipTool*, *Test Languages* and *Insurance Examples*

The VipTool 6.0.3 folder contains start scripts for Windows and Linux. The subfolder *default* contains a backup of the workspace and the subfolder *viptool* contains the used workspace. The *reset** scripts restore the default workspace by recursive deleting the used workspace (folder *viptool*) and copying the contents of *default* into *viptool*.

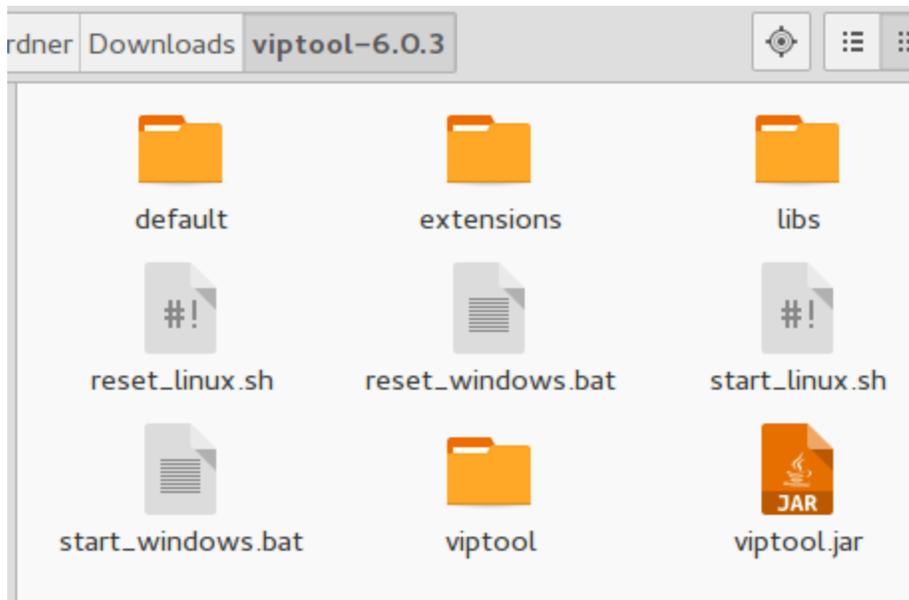


Figure 3: VipTool 6.0.3 folder

You can run the start scripts by clicking on the icon or from terminal.

```
~/Downloads/viptool-6.0.3 % ./start_linux.sh
```

Figure 4: Run from terminal

When VipTool is started you see the example of the paper *Folding Partially Ordered Runs into Workflow Nets*. The upper section contains the result of the folding algorithm and the lower sections show the used labelled partial orders.

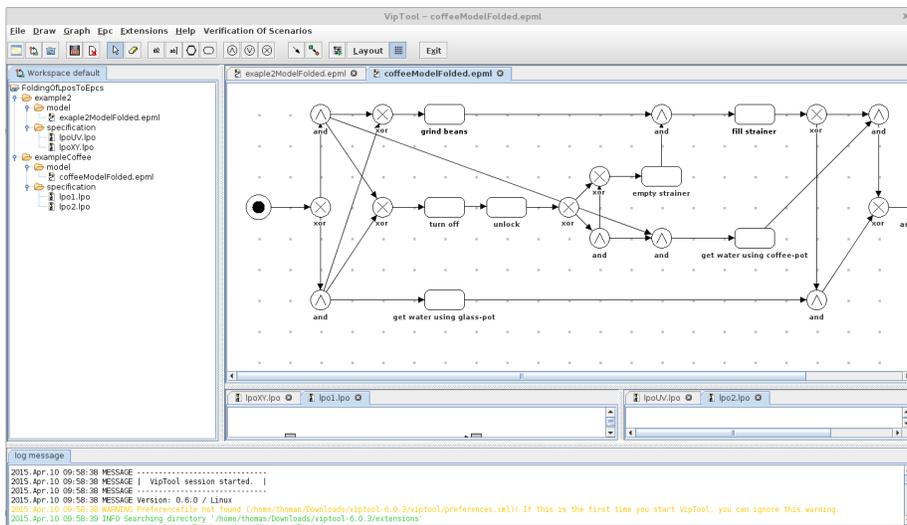


Figure 5: *Folding Partially Ordered Runs into Workflow Nets* example

2 Loading examples

Please close all open files.

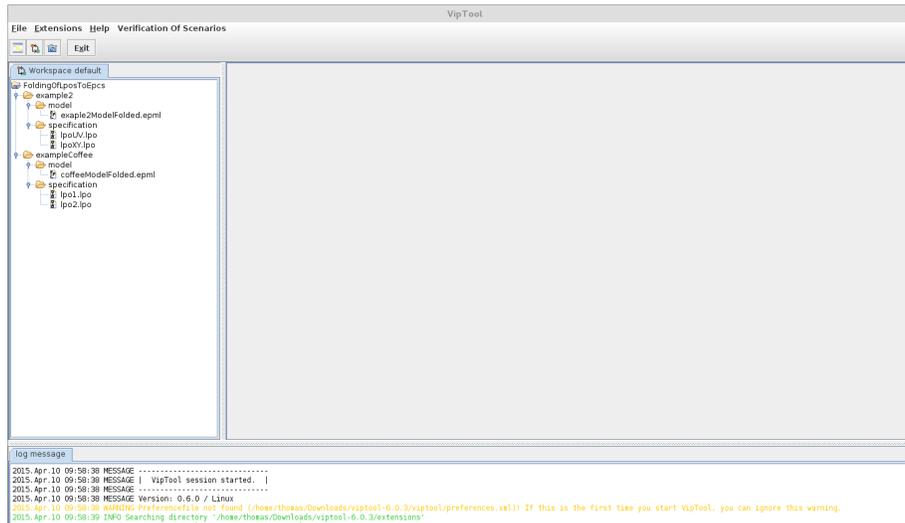


Figure 6: VipTool

You can load the *Test Languages* or the *Insurance Examples* by clicking *File* → *Load...* → *Project*.

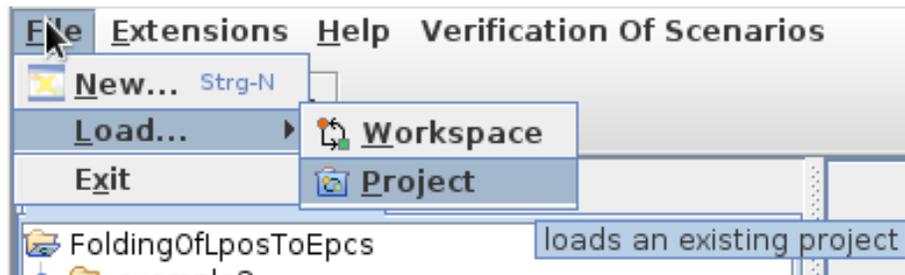


Figure 7: Load a project

Select one of the Project files (*.prj).

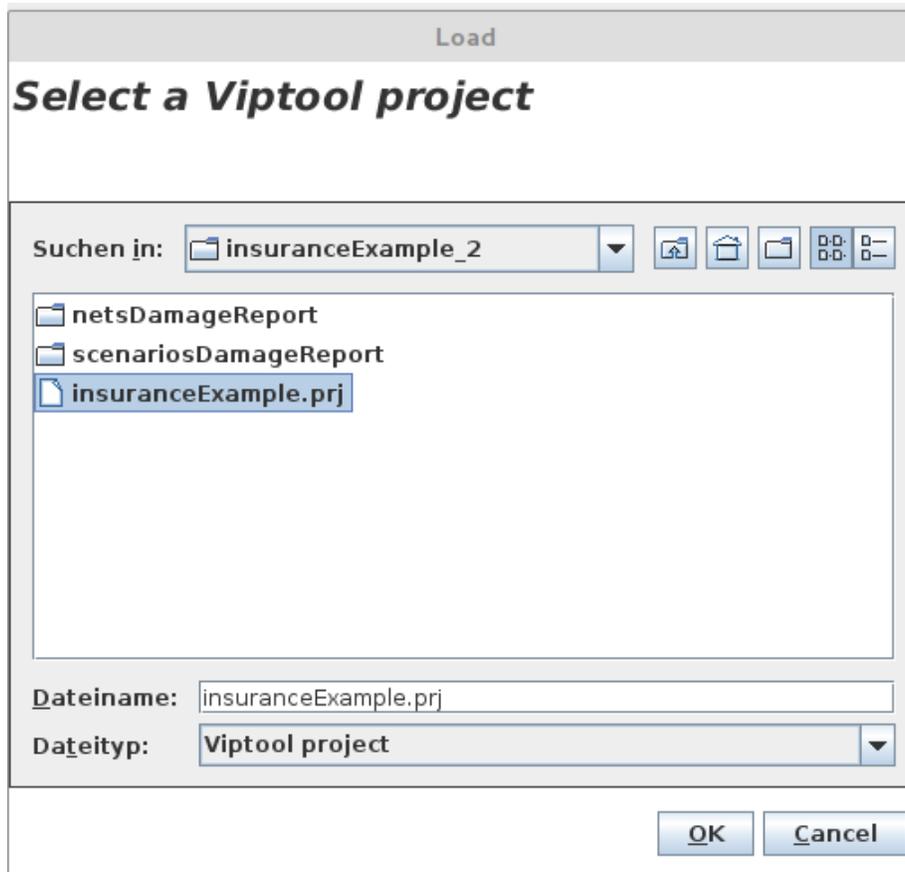


Figure 8: Projects are saved as *prj* files

After loading a project, you can inspect the contained files by clicking on the project and open files by double clicking. Open files are shown as tabs on the right side of the tool. If you open a file, VipTool shows the file type specific editing operations in the toolbar.

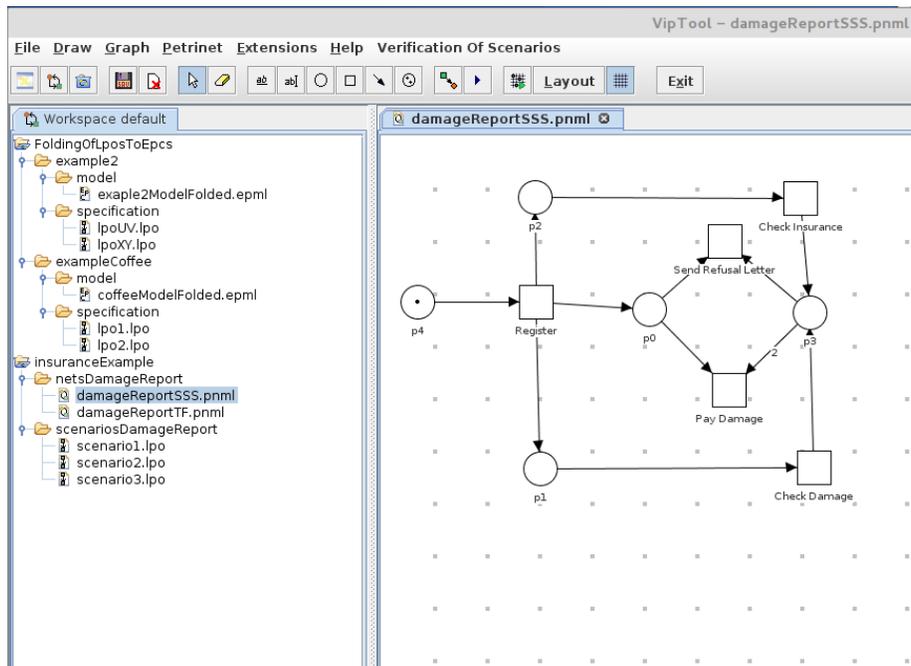


Figure 9: Insurance example

3 Running algorithms

To run one of our algorithms, you have to select the input for the algorithm in the project tree (with *shift* and *ctrl*). If you right click on one of the selected files, VipTool shows a selection of algorithms which can use the selected files as input. For example, in figure 10 a set of three labelled partial order files are selected and these files can be used as input for our folding algorithm (*Fold workflow net*) or for a synthesis algorithm (*Synthesize petrinet*). If you select other file types, you can choose other algorithms.

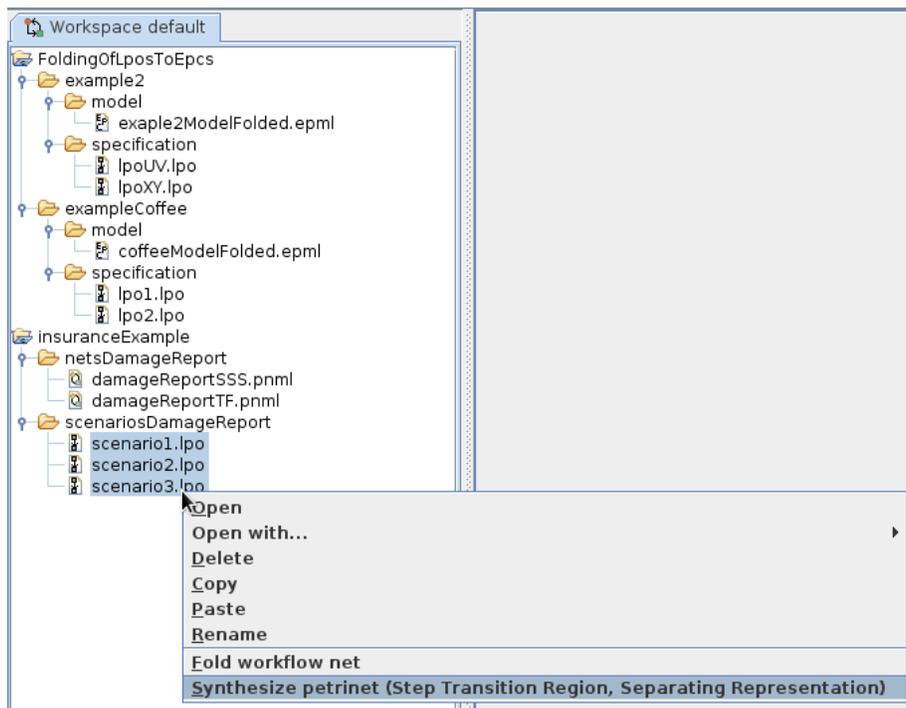


Figure 10: VipTool algorithms

If you run the synthesise algorithm, you have to choose a name and a folder for the new calculated Petri net.

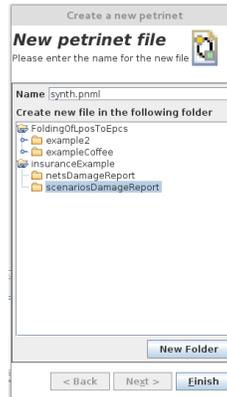


Figure 11: Name of generated file

The output file is opened as new tab on the right side. To see the result, run the layout algorithm from the upper toolbar to layout the output of the synthesise algorithm.

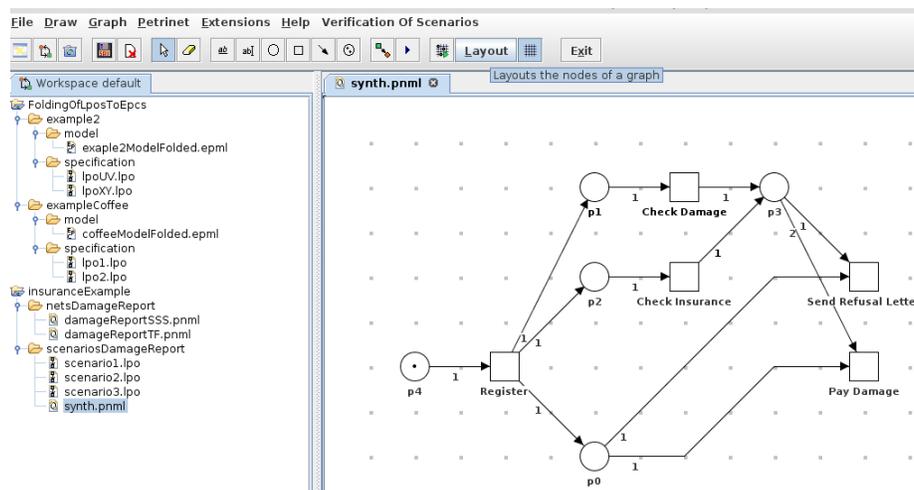


Figure 12: VipTool Homepage

Different algorithms produce different types of output files. If you run the folding algorithm, you will get a workflow Petri net.

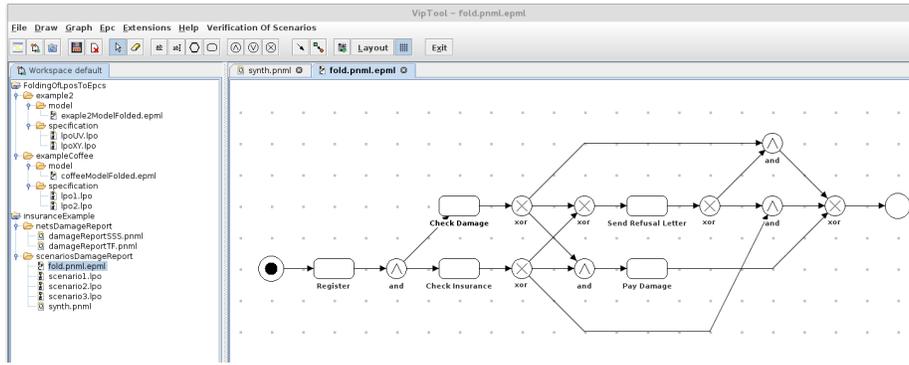


Figure 13: VipTool Homepage

4 Using other tools

The VipTool file format of Petri net files (*.pnml*) is a PNML like format, but not exactly PNML. If you want to use VipTool Petri nets with other tools like *WoPeD* or *ProM* you can download the *VipTool2PNML* file converter from our homepage (requires at least Java 8u31) to convert VipTool pnml files into a compatible format.