S3D Plugin

User Quick Start Guide

1. Download and requirements

S3D Plugin can be downloaded from:

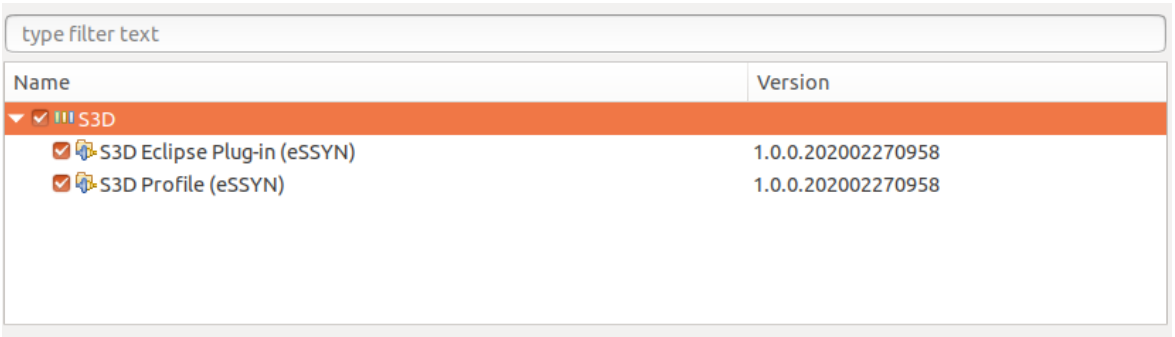
- https://s3d.unican.es/

S3D Plugin has the following requirements:

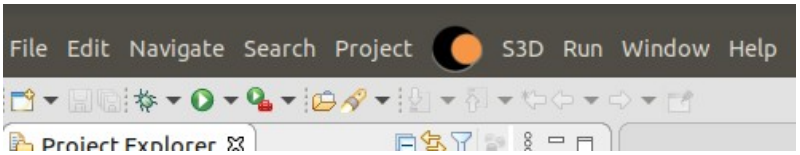
- Linux-based OS (Ubuntu)
- Eclipse Modeling Tools IDE
- Papyrus Modeling environment with UML-MARTE profile
- S3D library (available at https://s3d.unican.es/)
- VIPPE simulator (https://vippe.unican.es/) (Optional)

2. Installation

S3D Plugin comes in a JAR file. Once you have downloaded it, in Eclipse go to "Help → Install New Software". Then, click on "Add → Archive" and select the downloaded JAR file from your computer. You will see the S3D Eclipse Plugin and eSSYN profile features:



Select both of them and proceed with the installation. After restarting Eclipse, you will see the S3D plugin icon on the toolbar:

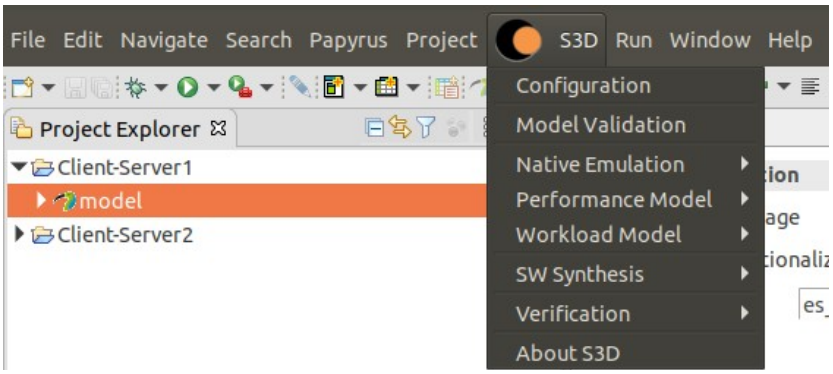


3. Usage

In order to show how to use S3D, this guide will make use a simple Client-Server example available on the website (https://s3d.unican.es/). Import the example to your Eclipse workspace and switch to Papyrus perspective ("Window → Perspective → Open Perspective"). Open the model by double-click on the papyrus icon, and it will be shown in the Model Explorer. From here you can navigate between the different views of model, as described in S3D Modelling Methodology.

3.1 Plugin options

By clicking on the plugin icon, its menu is shown, as it can be seen in next figure:



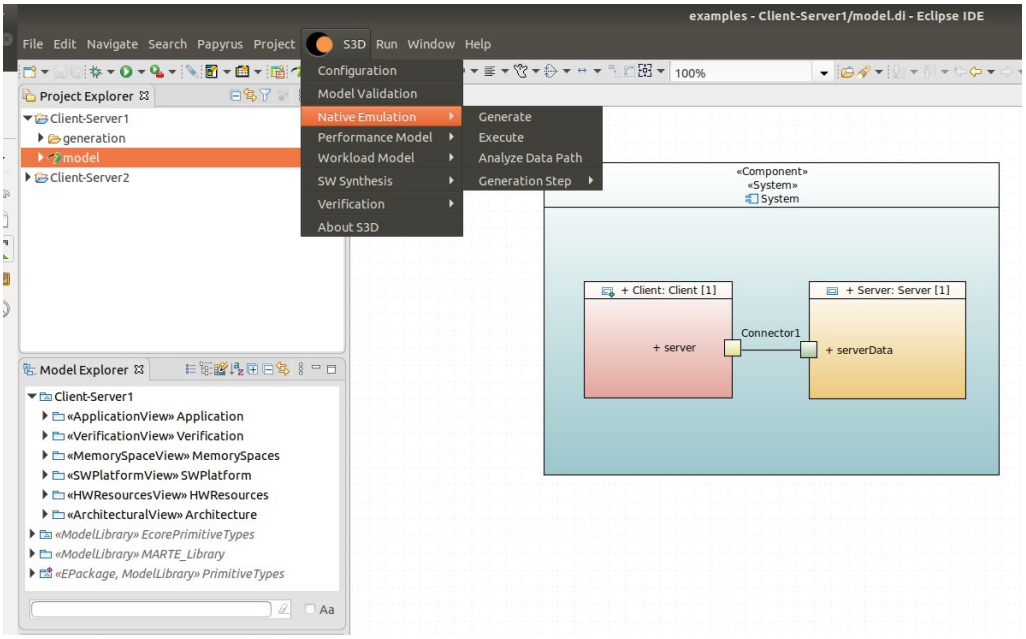
Then, the following options are revealed, among others:

- **Configuration:** Here several configuration parameters can be set, concerning Model Validation, code generation, build/compilation, execution/simulation and DSE. For user level, leave default options.
- **Native Emulation:** Sub-menu regarding native (host) generation and execution.
- **Performance Model**: Sub-menu regarding performance (annotated) model generation and execution for VIPPE compilation and simulation. (*VIPPE is required)*
- **Workload Model**: Sub-menu regarding workload model generation and execution for VIPPE compilation and simulation. (*VIPPE is required)*

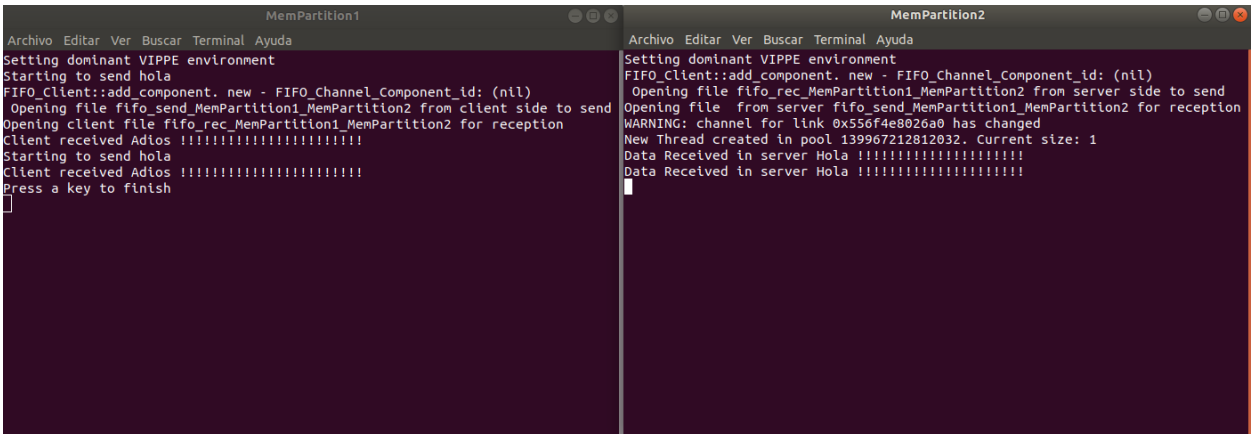
3.2 Code generation and execution

For this example we will generate codes from the Client-Server model for a host execution (native).

Click on "Native Emulation → Generate". A pop-up will appear asking if execution tracepoints are desired to be generated. Select your option and and all necessary files for the execution of the application are generated using the software synthesis tool eSSYN, and then compiled and linked.



Once the process has successfully finished, execute the application by clicking on “Native Emulation → Execute”. As before, you will be asked if you want to trace your application, and then a terminal per memory space described in the model will appear, executing the application.



Additionally, step generation is also available, so generation can be performed step by step creating the wrappers ,makefiles and finally compiling.