

Vezzal - a containerized tool to work with and test open source EDA tools

github.com/lankasaicharan/vezzal

Sai Charan Lanka

lankasaicharan@ieee.org

Constant development of tools often breaks something internally which can lead to other issues. Hence there is a need to test the tool for its previous supporting features. But the tool needs an environment to get launched and good test cases to test the features. This problem can be solved by "Vezzal". It is a docker containerised environment which is built completely from scratch, as shown in figure 1, which can be operated in two modes - user mode and test mode. In the test mode of Vezzal, the tool is provided with an environment supporting all dependencies like compilers, libraries etc., and a test cases database which could test the tool its core and supporting features with a very few inputs from the user. The testing can be done through the GitHub Actions feature to trigger the Vezzal because of any changes to the tool, thus supporting the continuous integration (CI) of tools. The CI workflow is shown in figure 2. Currently, the Vezzal is supporting the CI for Magic [1] and Netgen [2] tools at a basic level. In the user mode, Vezzal can be used to work with the supporting open-source EDA tools without worrying about the tool dependencies and can exercise them using the test cases database as examples. In addition to the main goal, Vezzal is designed to keep everything simple by following the KISS (KEEP IT SIMPLE, STUPID) principle to avoid any kind of usage restrictions, giving complete freedom to mould Vezzal according to the needs and requirements of the user. The CI feature offered by Vezzal couldn't be possible without the docker technology, which is also employed by the OpenLane [3], and GitHub Actions [4]. Many other tools will be added under user mode soon.

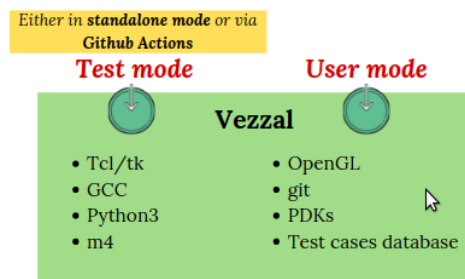


Figure 1 - Vezzal tool

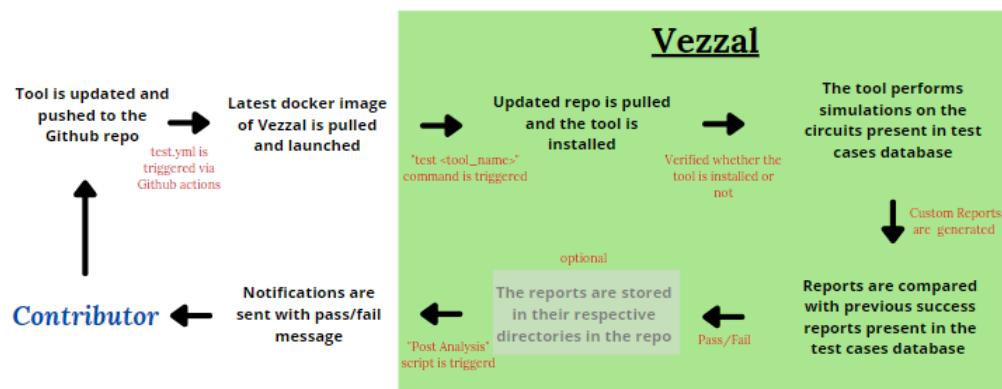


Figure 2 - CI workflow with Vezzal

References:

1. Magic - a layout tool (opencircuitdesign.com/magic)
2. Netgen - an LVS tool (opencircuitdesign.com/netgen)
3. OpenLane (github.com/efabless/OpenLane)
4. GitHub Actions (docs.github.com/en/actions)