



UNIVERSITÄT ZU LÜBECK
INSTITUTE FOR IT SECURITY

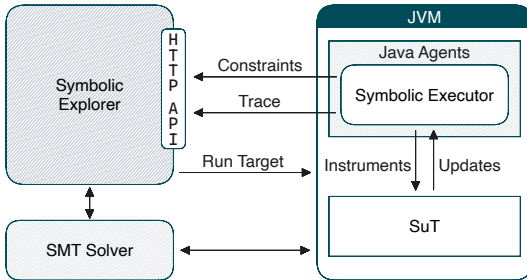
SWAT: Modular dynamic symbolic execution for Java applications using dynamic instrumentation

SV-COMP 2024

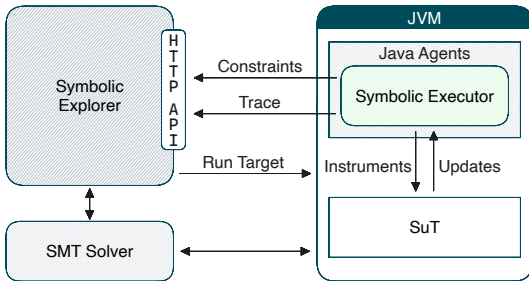
Nils Loose, Felix Mächtle, Florian Sieck, and Thomas Eisenbarth

04/08/2024

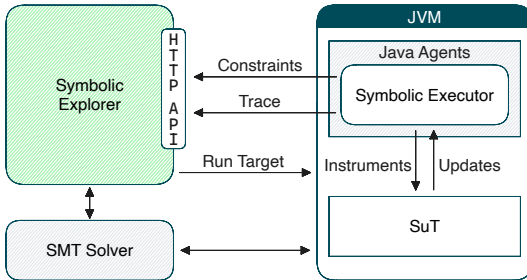
Institute for IT Security,
University of Lübeck,
Germany



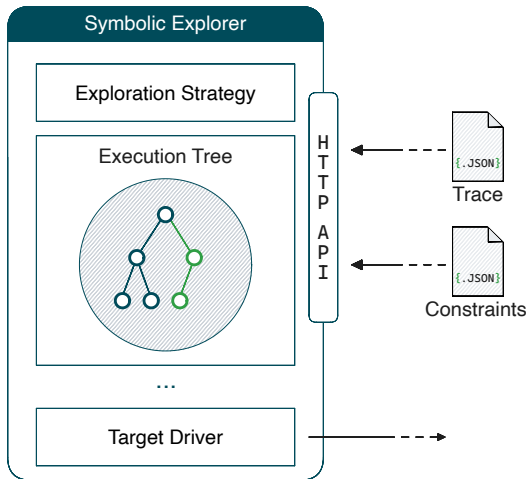
- Modular DSE engine for Java
- Based on CATG [1]
- Attaches as Java Agent
- Standalone Symbolic Explorer
- Fourth place in Java Overall



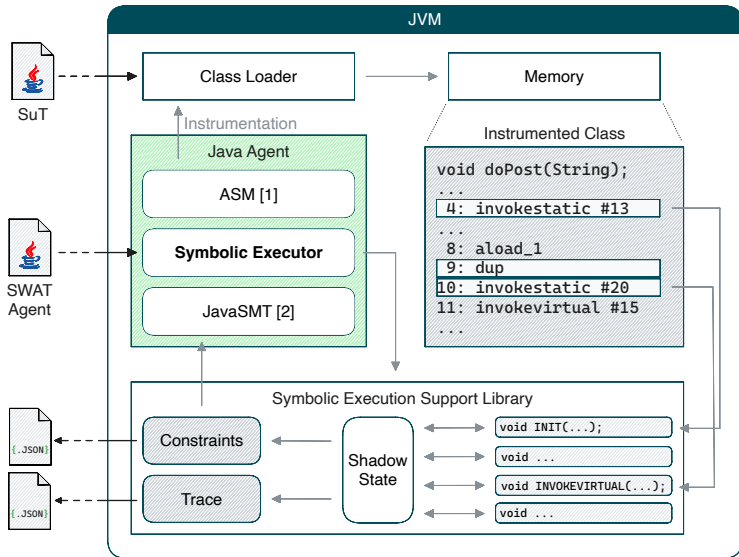
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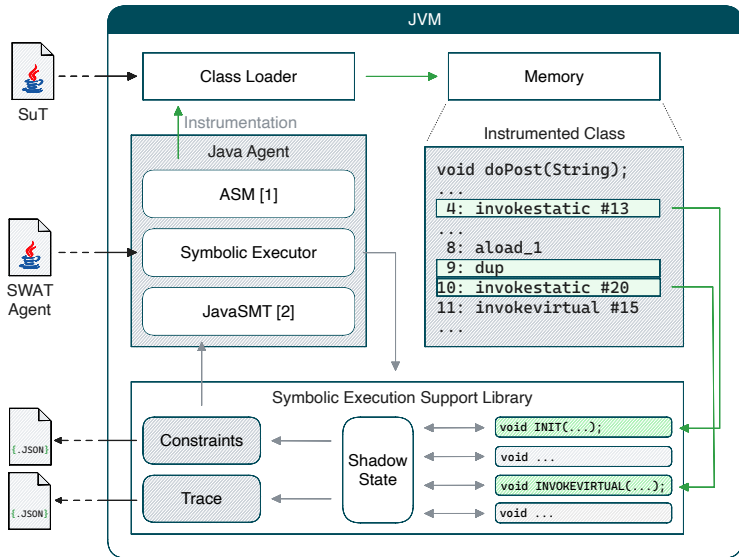


- Standalone application
- Constraints in SMT Lib v2 format
- Active mode:
 - Application driver (SV-Comp)
 - Request driver
- Passive mode:
 - External driver (fuzzer)



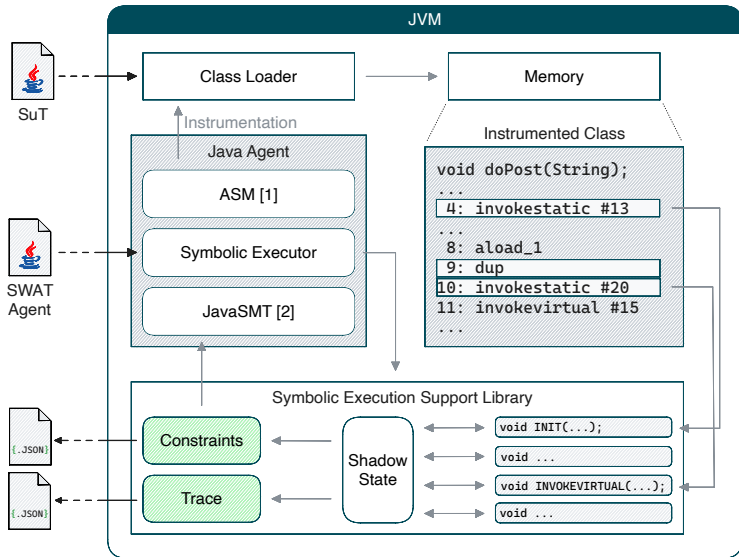
[1] Bruneton, E., et al. *ASM: A code manipulation tool to implement adaptable systems*. In: Adaptable and extensible component systems, 2002.

[2] Baier, D., et al. *JavaSMT 3: Interacting with SMT Solvers in Java*. In: 33rd International Conference on Computer Aided Verification, CAV 2021.



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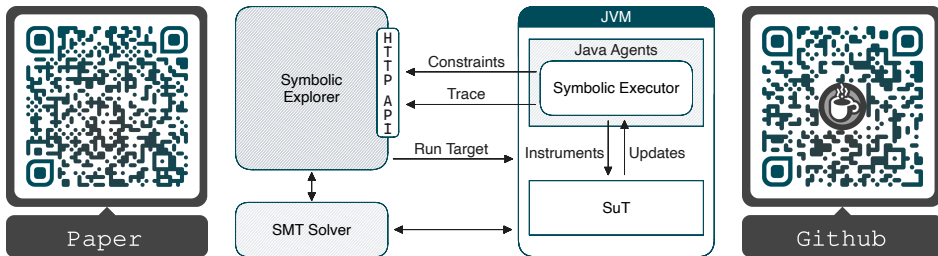
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Repository: <https://github.com/SWAT-project/SWAT>

Documentation: <http://swat-project.github.io/docs/>