

A Deterministic Memory Allocator for Dynamic Symbolic Execution (Artifact)

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Abstract

KDALLOC is a deterministic memory allocator for Dynamic Symbolic Execution. This artifact provides the allocator itself, integrated into the

KLEE symbolic execution engine and the evaluation thereof.

2012 ACM Subject Classification Software and its engineering → Software testing and debugging

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Evaluation Policy The artifact has been evaluated as described in the ECOOP 2022 Call for Artifacts and the ACM Artifact Review and Badging Policy.

1 Scope

The artifact provides the full sources that were evaluated in the paper. All results in Section 6 are supported by the artifact, including the SMT query analysis. See `README.md` for the exact steps.

2 Content

The artifact package includes:

- `README.md`: The main documentation of the artifact.
- `kdalloc_main.tgz`: The primary docker container.
- `kdalloc_moklee.tgz`: MOKLEE with KDALLOC.
- `vm.ova`: A virtual machine with both containers ready to run.



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3 Getting the artifact

The artifact endorsed by the Artifact Evaluation Committee is available free of charge on the Dagstuhl Research Online Publication Server (DROPS). The artifact is available at: <https://doi.org/10.5281/zenodo.6540857>.

4 Tested platforms

When running the artifact as linux containers, huge tables must not be “always” enabled. See `README.md` for more information.

When running the artifact as a virtual machine (`vm.ova`), it should run as long as the virtualization software can execute the provided virtual machine. The image was generated using VMWare Workstation 16.2.3.

5 License

All parts contributed by the authors, especially `KDALLOC` itself, are licensed as CC BY 4.0. However, the artifact is built on top of various other software under a variety of other licenses. The containers are built on Ubuntu 18.04.

6 MD5 sum of the artifact

d973292371f5dcc0ff151e6ec2ce92df

7 Size of the artifact

8.1 GiB