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.
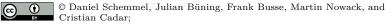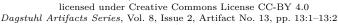
1 Scope

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.
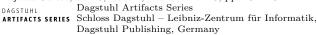
2 Content

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.

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