

Artifact - Historia: Refuting Callback Reachability with Message-History Logics

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1 INTRODUCTION

This document explains the artifact for the Historia paper [1]. The goal of this document is to first give a set of instructions for reproducing the experimental results and then give a technical explanation of how the implementation connects to the technical contributions.

2 PREREQUISITES - RUNNING THE HISTORIA DOCKER CONTAINER

We have configured the experiments to be run within a Docker container provided with this artifact. This Docker file may be found in the root directory of this archive and is labeled `historia.docker`. Please follow the instructions to install docker from <https://docs.docker.com/engine/install/>.

Importing the docker container can be done with the following command.

```
docker import historia.docker
```

The docker container may be run with the following command. *[TODO: expose web port and swap with jupyter command]*

```
docker run --memory=8G --memory-swap="16G" --rm -it historia bash
```

All subsequent steps may be done through the web interface at <http://localhost:8080>.

3 REPRODUCING THE HISTORIA RESULTS

In this section, we explain how to generate the tables shown in the evaluation section. Since the full experiments require substantial system resources, we strongly suggest reproducing a subset of the experiments. However, all data and scripts are available to run the full experiment if desired.

Due to the required system resource requirements, the experiments were run on one of three available machines:

- (1) AMD Ryzen 7 5800X3D 8-Core Processor with 128GB of ram.
- (2) AMD EPYC 7763 64-Core Processor with 256GB of ram.
- (3) Xeon Gold 6240R CPU 48-Core Processor with 192 GB of ram.

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The number of timeouts and runtime required will depend on the available resources. [TODO: *we have curated a subset of the experiments that may be run on 8GB of ram*]

3.1 Running RQ1

[TODO:]

3.2 Running RQ2

[TODO:]

3.3 Running Unit Tests

[TODO:]

REFERENCES

- [1] Shawn Meier, Sergio Mover, Gowtham Kaki, and Bor-Yuh Evan Chang. 2023. Historia: Refuting Callback Reachability with Message-History Logics.. In *Object-Oriented Programming Systems, Languages, and Applications (OOPSLA)*.