

Application: Walnut: Enhanced Debugging Workflows and Tooling

Team: Walnut

Milestone: Milestone 1: Enhance Cargo Stylus Trace command to output user-defined Rust functions including hierarchy between calls

Funding Amount Unlocked: 57,000 ARB

Date Submitted: 04/09/2025

Summary of the Deliverables: We are submitting the completion of Milestone 1. All originally planned objectives for this milestone have been successfully delivered.

We forked cargo-stylus into a new repository called `cargo-stylus-walnut` and implemented a new command that generates detailed call traces for Stylus transactions. The trace includes:

- User-defined Rust function calls
- Internal and external call information
- Function arguments and corresponding line numbers
- A hierarchical view of function calls

Return values are not included in the trace output. While they were initially part of the milestone plan, we found that even general-purpose Rust debuggers typically omit return values.

Following this established convention, we chose to streamline our output by doing the same.

Deliverables & Proof of Work:

[0] <https://github.com/walnuthq/walnut-dbg>: LLDB-based debugger with blockchain-oriented plugins

[1] <https://github.com/walnuthq/cargo-stylus-walnut>: Fork of cargo stylus with Walnut's debugging enhancements

To install and test the tool, please follow the README.md in the [cargo-stylus-walnut](#) repository.

Challenges and/or Adjustments to Next Steps: We experienced a delayed start on Milestone 1, which has pushed us slightly behind the original schedule. However, we are already nearing completion of Milestone 2 and expect to catch up to the initial timeline. We've encountered no major roadblocks and remain confident in our ability to deliver all milestones as planned by the end of the Sprint.

Do you attest that all the provided information is accurate and the deliverables meet the expectations set at the onset of the grant agreement. Yes