OpenMEV SushiSwap Router v1 - Release Candidate Preview

OpenMevRouter contract serves to replace the Sushiswap Router contract on Ethereum, Avalanche and Polygon.

Inbuilt MEV contract. For the User it aims to offer:

1. Better order routing for minimal slippage
2. At source MEV with instant user rewards
3. Onchain accounting and distributing of funds without an ‘operator/owner/ops/etc’

the Router contract defines generic strategies that are usd

- OpenMEV Router V1 Contract Test Suite provides 5 basic Trade Execution Pathways for realizing traditional MEV opportunities
- TEP 1 small swaps complete as usual()
- TEP 2: force uniswap trade through +ve slippage()
- TEP 3: flashloan backrun from large swap()
- TEP 4: non-backrunable large multi-hop swap (no opposite pairs)()
- TEP 5: run non-flashloan backrun from large swap (compare to TEST 3)()

Version 1 MEV strategies

- cross-dex backruns for swaps and liquidity changes
- reduced slippage fallback router

The contract leverages and depends on 2 external protocols:

1. Aave V2 for flashloan backruns
2. Uniswap V2 (or equivalent on another network) for backrun completion and fallback swaps

Version 1 testing progress

Swaps and backruns are working as expected. A full test suite needs validation - test suite is written in - python3 (pytest/hypothesis) - solidity (ds-test/dapptools/foundry)

yAcademy scheduled for auditing 3rd party contracted auditor scheduled as well for an audit. Potentially some gas savings and optimisations to do.

Improvements for Version 2

- sandwiches - held off because code gets a bit messier and not so attractive for users
- triangular backruns - search and calculations will use a lot more gas
- curve integration for backruns and reduced slippage

Advantages over current setup for backruns and sandwiches

- no state lag - calculations are exact at the time of execution
- capture all sushiswap smart contract txs, not just UX
- instant user rewards upon successful backrun
- no bundle needed. Tx is self contained and executed accurately whenever it goes on-chain, so it does not need to compete to be at the head of the block for a pre-known state.
- can run on Avalanche and Polygon with no change
- transparency for methods and rewards

- can work with or without MEV protection relay

Disadvantages

- potentially more gas cost for swaps to check backruns even if no backrun is executed
- dependent on external protocols
- lose privacy over math and methods

Timeframe

The Contract is undergoing a feedback process from the Sushi team, one feature that will probably be implemented that currently is not is gas-free trading (this is different than the gas rebate mechanism, this lets you pay in your ERC20 for the transaction).

We expect to submit a proposal next Thursday for Sushi voting to have the router deployed and configured for usage within 2 weeks of voting passing.

Links

To see the Type Interface / API visit https://manifoldfinance.github.io/v2-preview/

Summary of Test Suite can be found here:v2-preview/TEST_SUITE.md at master · manifoldfinance/v2-preview · GitHub