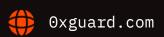


# Smart contracts security assessment

Final report
Tariff: Standard

# Repath Finance

March 2022





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# Introduction

This report has been prepared for the Repath Finance team upon their request.

The audited project is a fork of the Tomb Finance Project. The code is available in the Github repository. The code was checked in 8ef8667 commit.

The purpose of this audit was to ensure that no issues were introduced with the changes to the original code and that known vulnerabilities (e.g. circumventing the protocol's fee system) are fixed prior to deployment.

This project has a problem with the type of ownership in contracts, the Tomb project has the same problem.

Further details about Repath Finance are available at the official website: <a href="https://repath.finance/">https://repath.finance/</a>

Name	Repath Finance
Audit date	2022-03-21 - 2022-03-23
Language	Solidity
Platform	Metis

# Contracts checked

Name	Address
DevFund	https://github.com/repathfinance/contracts/
	blob/8ef8667e4a87636a489df7ddbe1669976bf7f8ed/
	<pre>DevFund.sol</pre>
GenesisPool	https://github.com/repathfinance/contracts/
	blob/8ef8667e4a87636a489df7ddbe1669976bf7f8ed/
	<u>GenesisPool.sol</u>

🔾 x Guard March 2022 3 Masonry <a href="https://github.com/repathfinance/contracts/">https://github.com/repathfinance/contracts/</a>

blob/8ef8667e4a87636a489df7ddbe1669976bf7f8ed/

Masonry.sol

Oracle <a href="https://github.com/repathfinance/contracts/">https://github.com/repathfinance/contracts/</a>

blob/8ef8667e4a87636a489df7ddbe1669976bf7f8ed/

Oracle.sol

RePATH <a href="https://github.com/repathfinance/contracts/">https://github.com/repathfinance/contracts/</a>

blob/8ef8667e4a87636a489df7ddbe1669976bf7f8ed/

RePATH.sol

Rebond https://github.com/repathfinance/contracts/

blob/8ef8667e4a87636a489df7ddbe1669976bf7f8ed/

Rebond.sol

Rept <a href="https://github.com/repathfinance/contracts/">https://github.com/repathfinance/contracts/</a>

blob/8ef8667e4a87636a489df7ddbe1669976bf7f8ed/

Rept.sol

RewardPool https://github.com/repathfinance/contracts/

blob/8ef8667e4a87636a489df7ddbe1669976bf7f8ed/

RewardPool.sol

Timelock https://github.com/repathfinance/contracts/

blob/8ef8667e4a87636a489df7ddbe1669976bf7f8ed/

Timelock.sol

Treasury <a href="https://github.com/repathfinance/contracts/">https://github.com/repathfinance/contracts/</a>

blob/8ef8667e4a87636a489df7ddbe1669976bf7f8ed/

Treasury.sol

Multiple contracts

# Procedure

We perform our audit according to the following procedure:

#### **Automated analysis**



- Scanning the project's smart contracts with several publicly available automated Solidity analysis tools
- Manual verification (reject or confirm) all the issues found by the tools

#### Manual audit

Comparing the project to the Tomb Finance implementation

# Classification of issue severity

**High severity** High severity issues can cause a significant or full loss of funds, change

of contract ownership, major interference with contract logic. Such issues

require immediate attention.

**Medium severity** Medium severity issues do not pose an immediate risk, but can be

detrimental to the client's reputation if exploited. Medium severity issues may lead to a contract failure and can be fixed by modifying the contract

state or redeployment. Such issues require attention.

**Low severity** Low severity issues do not cause significant destruction to the contract's

functionality. Such issues are recommended to be taken into

consideration.

# Issues

#### **High severity issues**

#### No issues were found

#### **Medium severity issues**

#### No issues were found

#### Low severity issues

#### 1. Contract ownership (Treasury)

The Operator role can change the addresses of funds in the Treasury contract using the function setExtraFunds() function. The daoFund can be withdrawn if the operator account is compromised.

**Recommendation:** There are a large number of functions with the onlyOperator() modifier, there is a possibility that the operator can be compromised. It is recommended to create multiple roles for different kinds of functions to reduce the operator's problem. It is also recommended to add a time delay to the especially important set functions using the TimelockController. We also recommend that you look through the entire codebase to find functions that are dangerous for you as the owner of the project (mainly set functions), if there are any, then add a call to them via multisig wallet. This will help avoid the issue of owner compromise.

#### 2. Typos (Treasury)

Typos reduce the code's readability.

- 1) 1171L typo in function name "sereBondDepletionFloorPercent"
- 2) 944L, 1280L typo in event name "BoughreBonds"

**Recommendation:** Fix the typos.

#### 3. Few events (Multiple contracts)

Many set functions from contracts are missing events when changing important values in the contact.

**Recommendation:** Create events for these set functions.

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# Conclusion

The Repath Finance Project was compared with the Tomb Project. Repath Finance has changed the implementation of GenesisPool and Token contracts. Added a new contract - DevFund.

In the GenesisPool contract, the deposit fees are transferred to the daoFund address.

The changed Token contract is not affected by the vulnerability that was discovered in the Tomb before because it doesn't contain the implementation of transfer with taxes.

# Disclaimer

This report is subject to the terms and conditions (including without limitation, description of services, confidentiality, disclaimer and limitation of liability)set forth in the Services Agreement, or the scope of services, and terms and conditions provided to the Company in connection with the Agreement. This report provided in connection with the Services set forth in the Agreement shall be used by the Company only to the extent permitted under the terms and conditions set forth in the Agreement. This report may not be transmitted, disclosed, referred to or relied upon by any person for any purposes without 0xGuard prior written consent.

This report is not, nor should be considered, an "endorsement" or "disapproval" of any particular project or team. This report is not, nor should be considered, an indication of the economics or value of any "product" or "asset" created by any team or project that contracts 0xGuard to perform a security assessment. This report does not provide any warranty or guarantee regarding the absolute bug-free nature of the technology analyzed, nor do they provide any indication of the technologies proprietors, business, business model or legal compliance.

This report should not be used in any way to make decisions around investment or involvement with any particular project. This report in no way provides investment advice, nor should be leveraged as investment advice of any sort. This report represents an extensive assessing process intending to help our customers increase the quality of their code while reducing the high level of risk presented by cryptographic tokens and blockchain technology.

# Slither output

```
UniswapV2OracleLibrary.currentBlockTimestamp() (contracts/Oracle.sol#492-494) uses a
weak PRNG: "uint32(block.timestamp % 2 ** 32) (contracts/Oracle.sol#493)"
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#weak-PRNG
Reentrancy in ReptGenesisRewardPool.deposit(uint256,uint256) (contracts/
GenesisPool.so1#750-774):

⊠External calls:

⊠⊠- returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/GenesisPool.sol#543)
MM- rept.safeTransfer(_to,_reptBalance) (contracts/GenesisPool.sol#812)
MM- rept.safeTransfer(_to,_amount) (contracts/GenesisPool.sol#814)
MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
GenesisPool.so1#763)
M- safeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#758)
MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
GenesisPool.sol#767)
GenesisPool.sol#772)
Reentrancy in ReptGenesisRewardPool.deposit(uint256,uint256) (contracts/
GenesisPool.so1#750-774):

⊠External calls:

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/GenesisPool.sol#543)
MM- rept.safeTransfer(_to,_reptBalance) (contracts/GenesisPool.sol#812)
MM- rept.safeTransfer(_to,_amount) (contracts/GenesisPool.sol#814)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
GenesisPool.sol#763)
```

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MExternal calls sending eth:
M- safeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#758)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
Reentrancy in ReptGenesisRewardPool.withdraw(uint256,uint256) (contracts/
GenesisPool.sol#777-794):

⊠External calls:

    SafeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#785)

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/GenesisPool.sol#543)
MM- rept.safeTransfer(_to,_reptBalance) (contracts/GenesisPool.sol#812)
MM- rept.safeTransfer(_to,_amount) (contracts/GenesisPool.sol#814)
MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
M- user.amount = user.amount.sub(_amount) (contracts/GenesisPool.sol#789)
Reentrancy in ReptGenesisRewardPool.withdraw(uint256,uint256) (contracts/
GenesisPool.sol#777-794):

⊠External calls:

M- safeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#785)

MMS - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/GenesisPool.sol#543)
MM- rept.safeTransfer(_to,_reptBalance) (contracts/GenesisPool.sol#812)
MM- rept.safeTransfer(_to,_amount) (contracts/GenesisPool.sol#814)
MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
MExternal calls sending eth:
M- safeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#785)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
GenesisPool.so1#792)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities
```

```
Reentrancy in Masonry.stake(uint256) (contracts/Masonry.sol#795-800):

⊠External calls:

☑- super.stake(amount) (contracts/Masonry.sol#797)

MM- returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/Masonry.sol#406)

MMS - share.safeTransferFrom(msg.sender,address(this),amount) (contracts/Masonry.sol#624)

MM- (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)

☑- super.stake(amount) (contracts/Masonry.sol#797)

MM- (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)
M- masons[msg.sender].epochTimerStart = treasury.epoch() (contracts/Masonry.sol#798)
Reentrancy in Masonry.withdraw(uint256) (contracts/Masonry.sol#802-808):

⊠External calls:

☑- claimReward() (contracts/Masonry.sol#805)

MMS - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/Masonry.sol#406)

MM - (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)

MMJ- rept.safeTransfer(msg.sender,reward) (contracts/Masonry.sol#820)

⊠⊠- returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/Masonry.sol#406)
MM- (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)

⊠Muscopi Share.safeTransfer(msg.sender,amount) (contracts/Masonry.sol#632)

☑- claimReward() (contracts/Masonry.sol#805)

MM - (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)

☑- super.withdraw(amount) (contracts/Masonry.sol#806)

MM- (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)
MM- _balances[msg.sender] = masonShare.sub(amount) (contracts/Masonry.sol#631)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities
Reentrancy in RePathRewardPool.deposit(uint256, uint256) (contracts/
RewardPool.so1#738-756):

⊠External calls:

    SafeRePathTransfer(_sender,_pending) (contracts/RewardPool.sol#746)

MM- returndata = address(token).functionCall(data,SafeERC20: low-level call failed)
```

```
(contracts/RewardPool.sol#542)

⊠⊠- repath.safeTransfer(_to,_repathBal) (contracts/RewardPool.sol#794)

⊠Multiple SafeTransfer(_to,_amount) (contracts/RewardPool.sol#796)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)
RewardPool.sol#751)

    SafeRePathTransfer(_sender,_pending) (contracts/RewardPool.sol#746)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)
M- user.rewardDebt = user.amount.mul(pool.accRePathPerShare).div(1e18) (contracts/
RewardPool.sol#754)
Reentrancy in RePathRewardPool.withdraw(uint256,uint256) (contracts/
RewardPool.sol#759-776):

⊠External calls:

    SafeRePathTransfer(_sender,_pending) (contracts/RewardPool.sol#767)

MMS - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/RewardPool.sol#542)

MMJ- repath.safeTransfer(_to,_repathBal) (contracts/RewardPool.sol#794)

⊠Multiple SafeTransfer(_to,_amount) (contracts/RewardPool.sol#796)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)
☑- safeRePathTransfer(_sender,_pending) (contracts/RewardPool.sol#767)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)
Reentrancy in RePathRewardPool.withdraw(uint256,uint256) (contracts/
RewardPool.so1#759-776):
MExternal calls:

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/RewardPool.sol#542)

⊠⊠- repath.safeTransfer(_to,_repathBal) (contracts/RewardPool.sol#794)

⊠⊠- repath.safeTransfer(_to,_amount) (contracts/RewardPool.sol#796)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)
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MExternal calls sending eth:

MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)
RewardPool.sol#774)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities
Reentrancy in Treasury.allocateSeigniorage() (contracts/Treasury.sol#1344-1384):
MExternal calls:
☑- _updateReptPrice() (contracts/Treasury.sol#1345)
MM- IOracle(reptOracle).update() (contracts/Treasury.sol#1241)
M- _sendToMasonry(_savedForMasonry) (contracts/Treasury.sol#1375)

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/Treasury.sol#860)
MM- IBasisAsset(rept).mint(address(this),_amount) (contracts/Treasury.sol#1310)

MMS- (success, returndata) = target.call{value: value}(data) (contracts/Treasury.sol#142)

MM- IERC20(rept).transfer(daoFund,_daoFundSharedAmount) (contracts/Treasury.sol#1315)
MM- IERC20(rept).transfer(devFund,_devFundSharedAmount) (contracts/Treasury.sol#1322)
MM- IERC20(rept).safeApprove(masonry,0) (contracts/Treasury.sol#1328)
MM- IERC20(rept).safeApprove(masonry,_amount) (contracts/Treasury.sol#1329)

MM - IMasonry(masonry).allocateSeigniorage(_amount) (contracts/Treasury.sol#1330)

☑- _sendToMasonry(_savedForMasonry) (contracts/Treasury.sol#1375)

MMS - (success, returndata) = target.call{value: value}(data) (contracts/Treasury.sol#142)

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Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities
DevFund.distribute() (contracts/DevFund.sol#218-228) ignores return value by
token.transfer(allocations[a].account,balance * allocations[a].points / totalPoints)
(contracts/DevFund.so1#224)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unchecked-
transfer
RePath.governanceRecoverUnsupported(IERC20,uint256,address) (contracts/
RePATH.sol#855-861) ignores return value by _token.transfer(_to,_amount) (contracts/
RePATH.so1#860)
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Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unchecked-
transfer
Rept.governanceRecoverUnsupported(IERC20,uint256,address) (contracts/
Rept.sol#1030-1036) ignores return value by _token.transfer(_to,_amount) (contracts/
Rept.sol#1035)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unchecked-
transfer
Treasury._sendToMasonry(uint256) (contracts/Treasury.sol#1309-1332) ignores return
value by IERC20(rept).transfer(daoFund,_daoFundSharedAmount) (contracts/
Treasury.so1#1315)
Treasury._sendToMasonry(uint256) (contracts/Treasury.sol#1309-1332) ignores return
value by IERC20(rept).transfer(devFund,_devFundSharedAmount) (contracts/
Treasury.sol#1322)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unchecked-
transfer
ReptGenesisRewardPool.pendingREPT(uint256,address) (contracts/GenesisPool.sol#705-716)
performs a multiplication on the result of a division:
\omega_-reptReward = _generatedReward.mul(pool.allocPoint).div(totalAllocPoint) (contracts/
GenesisPool.sol#712)
(contracts/GenesisPool.sol#713)
ReptGenesisRewardPool.updatePool(uint256) (contracts/GenesisPool.sol#727-747) performs
a multiplication on the result of a division:
☑-_reptReward = _generatedReward.mul(pool.allocPoint).div(totalAllocPoint) (contracts/
GenesisPool.sol#743)

⋈-pool.accReptPerShare =
pool.accReptPerShare.add(_reptReward.mul(1e18).div(tokenSupply)) (contracts/
GenesisPool.sol#744)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#divide-before-
multiply
RePathRewardPool.pendingShare(uint256,address) (contracts/RewardPool.sol#693-704)
performs a multiplication on the result of a division:
M-_repathReward = _generatedReward.mul(pool.allocPoint).div(totalAllocPoint) (contracts/
RewardPool.sol#700)
(contracts/RewardPool.sol#701)
RePathRewardPool.updatePool(uint256) (contracts/RewardPool.sol#715-735) performs a
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multiplication on the result of a division:
M-_repathReward = _generatedReward.mul(pool.allocPoint).div(totalAllocPoint) (contracts/
RewardPool.sol#731)
⋈-pool.accRePathPerShare =
pool.accRePathPerShare.add(_repathReward.mul(1e18).div(tokenSupply)) (contracts/
RewardPool.so1#732)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#divide-before-
multiply
Treasury.allocateSeigniorage() (contracts/Treasury.sol#1344-1384) performs a
multiplication on the result of a division:
M-_seigniorage = reptSupply.mul(_percentage).div(1e18) (contracts/Treasury.sol#1367)
M-_savedForMasonry = _seigniorage.mul(seigniorageExpansionFloorPercent).div(10000)
(contracts/Treasury.sol#1368)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#divide-before-
multiply
ReptGenesisRewardPool.updatePool(uint256) (contracts/GenesisPool.sol#727-747) uses a
dangerous strict equality:

☑- tokenSupply == 0 (contracts/GenesisPool.sol#733)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dangerous-
strict-equalities
RePathRewardPool.updatePool(uint256) (contracts/RewardPool.sol#715-735) uses a
dangerous strict equality:

☑- tokenSupply == 0 (contracts/RewardPool.sol#721)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dangerous-
strict-equalities
Reentrancy in Treasury.buyBonds(uint256,uint256) (contracts/Treasury.sol#1254-1281):

⊠External calls:

Treasury.sol#1277)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities-1
Treasury.setSupplyTiersEntry(uint8,uint256) (contracts/Treasury.sol#1150-1161) contains
a tautology or contradiction:
```

M- require(bool,string)(\_index >= 0,Index has to be higher than 0) (contracts/ Treasury.sol#1151) Treasury.setMaxExpansionTiersEntry(uint8,uint256) (contracts/Treasury.sol#1163-1169) contains a tautology or contradiction: M- require(bool,string)(\_index >= 0,Index has to be higher than 0) (contracts/ Treasury.sol#1164) Treasury.\_calculateMaxSupplyExpansionPercent(uint256) (contracts/ Treasury.sol#1334-1342) contains a tautology or contradiction: ☑- tierId >= 0 (contracts/Treasury.sol#1335) Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#tautology-orcontradiction DevFund.distribute().t (contracts/DevFund.sol#219) is a local variable never initialized DevFund.distribute().a (contracts/DevFund.sol#223) is a local variable never Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#uninitializedlocal-variables FixedPoint.mul(FixedPoint.uq112x112,uint256).z (contracts/Oracle.sol#451) is a local variable never initialized Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#uninitializedlocal-variables Treasury.getReptPrice().price (contracts/Treasury.sol#1002) is a local variable never initialized Treasury.allocateSeigniorage().\_savedForBond (contracts/Treasury.sol#1356) is a local variable never initialized Treasury.getReptUpdatedPrice().price (contracts/Treasury.sol#1010) is a local variable never initialized Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#uninitializedlocal-variables Treasury.getReptPrice() (contracts/Treasury.sol#1001-1007) ignores return value by IOracle(reptOracle).consult(rept,1e18) (contracts/Treasury.sol#1002-1006) Treasury.getReptUpdatedPrice() (contracts/Treasury.sol#1009-1015) ignores return value by IOracle(reptOracle).twap(rept,1e18) (contracts/Treasury.sol#1010-1014) Treasury.buyBonds(uint256, uint256) (contracts/Treasury.sol#1254-1281) ignores return value by IBasisAsset(rebond).mint(msg.sender,\_bondAmount) (contracts/Treasury.sol#1275)

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Treasury.\_sendToMasonry(uint256) (contracts/Treasury.sol#1309-1332) ignores return value by IBasisAsset(rept).mint(address(this),\_amount) (contracts/Treasury.sol#1310)

Treasury.allocateSeigniorage() (contracts/Treasury.sol#1344-1384) ignores return value by IBasisAsset(rept).mint(address(this),\_savedForBond) (contracts/Treasury.sol#1379) Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-return ReptGenesisRewardPool.setOperator(address) (contracts/GenesisPool.sol#819-821) should emit an event for: ☑- operator = \_operator (contracts/GenesisPool.sol#820) Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-eventsaccess-control Masonry.setOperator(address) (contracts/Masonry.sol#730-732) should emit an event for: ☑- operator = \_operator (contracts/Masonry.sol#731) Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-eventsaccess-control RePathRewardPool.setOperator(address) (contracts/RewardPool.sol#801-803) should emit an event for: ☑- operator = \_operator (contracts/RewardPool.sol#802) Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-eventsaccess-control Treasury.setOperator(address) (contracts/Treasury.sol#1128-1130) should emit an event for: ☑- operator = \_operator (contracts/Treasury.sol#1129) Treasury.setMasonry(address) (contracts/Treasury.sol#1132-1134) should emit an event for: ☑- masonry = \_masonry (contracts/Treasury.sol#1133) Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-eventsaccess-control DevFund.addAllocation(address,uint256) (contracts/DevFund.sol#230-236) should emit an event for: M- totalPoints += points (contracts/DevFund.sol#235) DevFund.setAllocationPoints(address,uint256) (contracts/DevFund.sol#249-256) should emit an event for: DevFund.so1#252) Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-eventsarithmetic

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ReptGenesisRewardPool.add(uint256, IERC20, bool, uint256) (contracts/

```
GenesisPool.sol#638-676) should emit an event for:
M- totalAllocPoint = totalAllocPoint.add(_allocPoint) (contracts/GenesisPool.sol#674)
ReptGenesisRewardPool.set(uint256,uint256) (contracts/GenesisPool.sol#679-688) should
emit an event for:
M- totalAllocPoint = totalAllocPoint.sub(pool.allocPoint).add(_allocPoint) (contracts/
GenesisPool.so1#683-685)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-events-
arithmetic
Masonry.setLockUp(uint256,uint256) (contracts/Masonry.sol#734-738) should emit an event
for:
M- withdrawLockupEpochs = _withdrawLockupEpochs (contracts/Masonry.sol#736)
M- rewardLockupEpochs = rewardLockupEpochs (contracts/Masonry.sol#737)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-events-
arithmetic
RePathRewardPool.add(uint256, IERC20, bool, uint256) (contracts/RewardPool.sol#626-664)
should emit an event for:

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RePathRewardPool.set(uint256,uint256) (contracts/RewardPool.sol#667-676) should emit an
event for:
M- totalAllocPoint = totalAllocPoint.sub(pool.allocPoint).add(_allocPoint) (contracts/
RewardPool.sol#671-673)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-events-
arithmetic
Treasury.setReptPriceCeiling(uint256) (contracts/Treasury.sol#1140-1143) should emit an
event for:
M- reptPriceCeiling = _reptPriceCeiling (contracts/Treasury.sol#1142)
Treasury.setMaxSupplyExpansionPercents(uint256) (contracts/Treasury.sol#1145-1148)
should emit an event for:
M- maxSupplyExpansionPercent = _maxSupplyExpansionPercent (contracts/
Treasury.sol#1147)
Treasury.sereBondDepletionFloorPercent(uint256) (contracts/Treasury.sol#1171-1174)
should emit an event for:
M- bondDepletionFloorPercent = _bondDepletionFloorPercent (contracts/
Treasury.sol#1173)
Treasury.setMaxDebtRatioPercent(uint256) (contracts/Treasury.sol#1181-1184) should emit
an event for:
M- maxDebtRatioPercent = _maxDebtRatioPercent (contracts/Treasury.sol#1183)
Treasury.setBootstrap(uint256, uint256) (contracts/Treasury.sol#1186-1191) should emit
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an event for:
M- bootstrapEpochs = _bootstrapEpochs (contracts/Treasury.sol#1189)
Treasury.sol#1190)
Treasury.setExtraFunds(address,uint256,address,uint256) (contracts/
Treasury.sol#1193-1207) should emit an event for:
M- daoFundSharedPercent = _daoFundSharedPercent (contracts/Treasury.sol#1204)
M- devFundSharedPercent = _devFundSharedPercent (contracts/Treasury.sol#1206)
Treasury.setMaxDiscountRate(uint256) (contracts/Treasury.sol#1209-1211) should emit an
event for:
M- maxDiscountRate = _maxDiscountRate (contracts/Treasury.sol#1210)
Treasury.setMaxPremiumRate(uint256) (contracts/Treasury.sol#1213-1215) should emit an
event for:
M- maxPremiumRate = _maxPremiumRate (contracts/Treasury.sol#1214)
Treasury.setDiscountPercent(uint256) (contracts/Treasury.sol#1217-1220) should emit an
event for:
M- discountPercent = _discountPercent (contracts/Treasury.sol#1219)
Treasury.setPremiumThreshold(uint256) (contracts/Treasury.sol#1222-1226) should emit an
event for:
Treasury.setPremiumPercent(uint256) (contracts/Treasury.sol#1228-1231) should emit an
event for:
Ø- premiumPercent = _premiumPercent (contracts/Treasury.sol#1230)
Treasury.setMintingFactorForPayingDebt(uint256) (contracts/Treasury.sol#1233-1236)
should emit an event for:
M- mintingFactorForPayingDebt = _mintingFactorForPayingDebt (contracts/
Treasury.sol#1235)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-events-
arithmetic
DevFund.call(address,uint256,bytes)._to (contracts/DevFund.sol#258) lacks a zero-check
on:
MM- (success, result) = _to.call{value: _value}(_data) (contracts/DevFund.sol#259)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-
address-validation
ReptGenesisRewardPool.constructor(address,uint256,address)._daoFund (contracts/
GenesisPool.sol#615) lacks a zero-check on :
MM- daoFund = _daoFund (contracts/GenesisPool.sol#619)
ReptGenesisRewardPool.setOperator(address)._operator (contracts/GenesisPool.sol#819)
lacks a zero-check on :
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MM- operator = _operator (contracts/GenesisPool.sol#820)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-
address-validation
Masonry.setOperator(address)._operator (contracts/Masonry.sol#730) lacks a zero-check
on:
MM- operator = _operator (contracts/Masonry.sol#731)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-
address-validation
RePath.setTreasuryFund(address)._communityFund (contracts/RePATH.sol#800) lacks a zero-
check on :
MM- communityFund = communityFund (contracts/RePATH.sol#802)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-
address-validation
RePathRewardPool.setOperator(address)._operator (contracts/RewardPool.sol#801) lacks a
zero-check on :
MM- operator = _operator (contracts/RewardPool.sol#802)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-
address-validation
Timelock.constructor(address,uint256).admin_ (contracts/Timelock.sol#244) lacks a zero-
check on :
MM- admin = admin (contracts/Timelock.sol#248)
Timelock.setPendingAdmin(address).pendingAdmin_ (contracts/Timelock.sol#271) lacks a
zero-check on :
MM- pendingAdmin = pendingAdmin_ (contracts/Timelock.sol#273)
Timelock.executeTransaction(address,uint256,string,bytes,uint256).target (contracts/
Timelock.sol#298) lacks a zero-check on :
MM- (success, returnData) = target.call.value(value)(callData) (contracts/
Timelock.sol#317)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-
address-validation
Treasury.initialize(address,address,address,address,uint256)._rept (contracts/
Treasury.sol#1085) lacks a zero-check on :
MM- rept = _rept (contracts/Treasury.sol#1092)
Treasury.initialize(address,address,address,address,uint256)._rebond (contracts/
Treasury.sol#1086) lacks a zero-check on :
MM- rebond = _rebond (contracts/Treasury.sol#1093)
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Treasury.initialize(address,address,address,address,address,uint256). repath (contracts/
Treasury.sol#1087) lacks a zero-check on :
MM- repath = _repath (contracts/Treasury.sol#1094)
Treasury.initialize(address,address,address,address,uint256). rept0racle
(contracts/Treasury.sol#1088) lacks a zero-check on :
MM- reptOracle = _reptOracle (contracts/Treasury.sol#1095)
Treasury.initialize(address,address,address,address,address,uint256)._masonry
(contracts/Treasury.sol#1089) lacks a zero-check on :
MM- masonry = _masonry (contracts/Treasury.sol#1096)
Treasury.setOperator(address)._operator (contracts/Treasury.sol#1128) lacks a zero-
check on :
MM- operator = _operator (contracts/Treasury.sol#1129)
Treasury.setMasonry(address)._masonry (contracts/Treasury.sol#1132) lacks a zero-check
on:
MM- masonry = _masonry (contracts/Treasury.sol#1133)
Treasury.setReptOracle(address)._reptOracle (contracts/Treasury.sol#1136) lacks a zero-
check on :
MM- reptOracle = _reptOracle (contracts/Treasury.sol#1137)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#missing-zero-
address-validation
DevFund.distribute() (contracts/DevFund.sol#218-228) has external calls inside a loop:
balance = token.balanceOf(address(this)) (contracts/DevFund.sol#221)
DevFund.distribute() (contracts/DevFund.sol#218-228) has external calls inside a loop:
token.transfer(allocations[a].account,balance * allocations[a].points / totalPoints)
(contracts/DevFund.so1#224)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation/#calls-inside-
a-loop
ReptGenesisRewardPool.updatePool(uint256) (contracts/GenesisPool.sol#727-747) has
external calls inside a loop: tokenSupply = pool.token.balanceOf(address(this))
(contracts/GenesisPool.sol#732)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation/#calls-inside-
a-loop
RePathRewardPool.updatePool(uint256) (contracts/RewardPool.sol#715-735) has external
calls inside a loop: tokenSupply = pool.token.balanceOf(address(this)) (contracts/
RewardPool.so1#720)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation/#calls-inside-
a-loop
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Treasury.getReptCirculatingSupply() (contracts/Treasury.sol#1244-1252) has external
calls inside a loop: balanceExcluded =
balanceExcluded.add(reptErc20.balanceOf(excludedFromTotalSupply[entryId])) (contracts/
Treasury.sol#1249)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation/#calls-inside-
a-loop
Variable 'Treasury.getReptPrice().price (contracts/Treasury.sol#1002)' in
Treasury.getReptPrice() (contracts/Treasury.sol#1001-1007) potentially used before
declaration: uint256(price) (contracts/Treasury.sol#1003)
Variable 'Treasury.getReptUpdatedPrice().price (contracts/Treasury.sol#1010)' in
Treasury.getReptUpdatedPrice() (contracts/Treasury.sol#1009-1015) potentially used
before declaration: uint256(price) (contracts/Treasury.sol#1011)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#pre-
declaration-usage-of-local-variables
Reentrancy in Treasury.allocateSeigniorage() (contracts/Treasury.sol#1344-1384):

⊠External calls:

☑- _updateReptPrice() (contracts/Treasury.sol#1345)
MM- IOracle(reptOracle).update() (contracts/Treasury.sol#1241)
M- _mse = _calculateMaxSupplyExpansionPercent(reptSupply).mul(1e14) (contracts/
Treasury.sol#1358)

MM - maxSupplyExpansionPercent = maxExpansionTiers[tierId] (contracts/Treasury.sol#1337)

M- previousEpochReptPrice = getReptPrice() (contracts/Treasury.sol#1346)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities-2
Reentrancy in ReptGenesisRewardPool.deposit(uint256, uint256) (contracts/
GenesisPool.so1#750-774):
MExternal calls:
☑- safeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#758)

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/GenesisPool.sol#543)
MM- rept.safeTransfer(_to,_reptBalance) (contracts/GenesisPool.sol#812)
MM- rept.safeTransfer(_to,_amount) (contracts/GenesisPool.sol#814)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
M- safeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#758)
MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
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M- RewardPaid(_sender,_pending) (contracts/GenesisPool.sol#759)
Reentrancy in ReptGenesisRewardPool.deposit(uint256, uint256) (contracts/
GenesisPool.so1#750-774):

⊠External calls:

M- safeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#758)

⊠⊠- returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/GenesisPool.sol#543)
MM- rept.safeTransfer(_to,_reptBalance) (contracts/GenesisPool.sol#812)
MM- rept.safeTransfer(_to,_amount) (contracts/GenesisPool.sol#814)
MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
GenesisPool.so1#763)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)

⊠Event emitted after the call(s):
Reentrancy in ReptGenesisRewardPool.emergencyWithdraw(uint256) (contracts/
GenesisPool.so1#797-805):

⊠External calls:

⊠Event emitted after the call(s):
Reentrancy in ReptGenesisRewardPool.withdraw(uint256,uint256) (contracts/
GenesisPool.so1#777-794):

⊠External calls:

    SafeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#785)

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/GenesisPool.sol#543)
MM- rept.safeTransfer(_to,_reptBalance) (contracts/GenesisPool.sol#812)
MM- rept.safeTransfer(_to,_amount) (contracts/GenesisPool.sol#814)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
M- safeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#785)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
```

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M- RewardPaid(_sender,_pending) (contracts/GenesisPool.sol#786)
Reentrancy in ReptGenesisRewardPool.withdraw(uint256,uint256) (contracts/
GenesisPool.sol#777-794):

⊠External calls:

M- safeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#785)

⊠⊠- returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/GenesisPool.sol#543)
MM- rept.safeTransfer(_to,_reptBalance) (contracts/GenesisPool.sol#812)
MM- rept.safeTransfer(_to,_amount) (contracts/GenesisPool.sol#814)
MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
M- pool.token.safeTransfer( sender, amount) (contracts/GenesisPool.sol#790)
MExternal calls sending eth:
M- safeReptTransfer(_sender,_pending) (contracts/GenesisPool.sol#785)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)

⊠Event emitted after the call(s):
M- Withdraw(_sender,_pid,_amount) (contracts/GenesisPool.sol#793)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities-3
Reentrancy in Masonry.allocateSeigniorage(uint256) (contracts/Masonry.sol#825-842):

⊠External calls:

⊠Event emitted after the call(s):
M- RewardAdded(msg.sender,amount) (contracts/Masonry.sol#841)
Reentrancy in Masonry.claimReward() (contracts/Masonry.sol#814-823):

⊠External calls:

M- rept.safeTransfer(msg.sender,reward) (contracts/Masonry.sol#820)
M- RewardPaid(msg.sender,reward) (contracts/Masonry.sol#821)
Reentrancy in Masonry.stake(uint256) (contracts/Masonry.sol#795-800):

⊠External calls:

☑- super.stake(amount) (contracts/Masonry.sol#797)

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/Masonry.sol#406)
MM- share.safeTransferFrom(msg.sender,address(this),amount) (contracts/Masonry.sol#624)
MM- (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)

⊠External calls sending eth:

    super.stake(amount) (contracts/Masonry.sol#797)
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MM- (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)

⊠Event emitted after the call(s):

☑- Staked(msg.sender,amount) (contracts/Masonry.sol#799)

Reentrancy in Masonry.withdraw(uint256) (contracts/Masonry.sol#802-808):

⊠External calls:

☑- claimReward() (contracts/Masonry.sol#805)

⊠⊠- returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/Masonry.sol#406)
MM- (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)

MMJ- rept.safeTransfer(msg.sender,reward) (contracts/Masonry.sol#820)

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/Masonry.sol#406)
MM- (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)

⊠MU- share.safeTransfer(msg.sender,amount) (contracts/Masonry.sol#632)

☑- claimReward() (contracts/Masonry.sol#805)
MM- (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)

    super.withdraw(amount) (contracts/Masonry.sol#806)

MM- (success, returndata) = target.call{value: value}(data) (contracts/Masonry.sol#530)

⊠Event emitted after the call(s):
M- Withdrawn(msg.sender,amount) (contracts/Masonry.so1#807)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities-3
Reentrancy in RePathRewardPool.deposit(uint256, uint256) (contracts/
RewardPool.sol#738-756):

⊠External calls:

☑- safeRePathTransfer(_sender,_pending) (contracts/RewardPool.sol#746)

MMS - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/RewardPool.sol#542)

⊠u-repath.safeTransfer(_to,_repathBal) (contracts/RewardPool.sol#794)

⊠⊠- repath.safeTransfer(_to,_amount) (contracts/RewardPool.sol#796)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)
MExternal calls sending eth:
MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)

⊠Event emitted after the call(s):
M- RewardPaid(_sender,_pending) (contracts/RewardPool.sol#747)
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Reentrancy in RePathRewardPool.deposit(uint256, uint256) (contracts/
RewardPool.so1#738-756):

⊠External calls:

    SafeRePathTransfer(_sender,_pending) (contracts/RewardPool.sol#746)

⊠⊠- returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/RewardPool.sol#542)

⊠⊠- repath.safeTransfer(_to,_repathBal) (contracts/RewardPool.sol#794)

MM- repath.safeTransfer(_to,_amount) (contracts/RewardPool.sol#796)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)
RewardPool.sol#751)
M- safeRePathTransfer(_sender,_pending) (contracts/RewardPool.sol#746)
MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)
Reentrancy in RePathRewardPool.emergencyWithdraw(uint256) (contracts/
RewardPool.sol#779-787):

⊠External calls:

⊠Event emitted after the call(s):
Reentrancy in RePathRewardPool.withdraw(uint256,uint256) (contracts/
RewardPool.sol#759-776):

⊠External calls:

    safeRePathTransfer(_sender,_pending) (contracts/RewardPool.sol#767)

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/RewardPool.sol#542)

MMJ- repath.safeTransfer(_to,_repathBal) (contracts/RewardPool.sol#794)

⊠⊠- repath.safeTransfer(_to,_amount) (contracts/RewardPool.sol#796)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)

MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)

⊠Event emitted after the call(s):
M- RewardPaid(_sender,_pending) (contracts/RewardPool.sol#768)
Reentrancy in RePathRewardPool.withdraw(uint256, uint256) (contracts/
RewardPool.so1#759-776):
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MExternal calls:

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/RewardPool.sol#542)

⊠u-repath.safeTransfer(_to,_repathBal) (contracts/RewardPool.sol#794)

⊠⊠- repath.safeTransfer(_to,_amount) (contracts/RewardPool.sol#796)

\[ \sqrt{SU} - (success, returndata) = target.call{value: value}(data) (contracts/\)

RewardPool.sol#119)
M- safeRePathTransfer(_sender,_pending) (contracts/RewardPool.sol#767)
MM- (success, returndata) = target.call{value: value}(data) (contracts/
RewardPool.sol#119)

⊠Event emitted after the call(s):
M- Withdraw(_sender,_pid,_amount) (contracts/RewardPool.sol#775)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities-3
Reentrancy in Timelock.executeTransaction(address,uint256,string,bytes,uint256)
(contracts/Timelock.sol#298-323):

⊠External calls:

M- (success, returnData) = target.call.value(value)(callData) (contracts/
Timelock.sol#317)

⊠Event emitted after the call(s):
Timelock.sol#320)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities-3
Reentrancy in Treasury._sendToMasonry(uint256) (contracts/Treasury.sol#1309-1332):

⊠External calls:

Reentrancy in Treasury._sendToMasonry(uint256) (contracts/Treasury.sol#1309-1332):

⊠External calls:

    \[
    \overline{A} - IBasisAsset(rept).mint(address(this),_amount) (contracts/Treasury.sol#1310)
    \]

    \[
    \overline{A} - IERC20(rept).transfer(daoFund,_daoFundSharedAmount) (contracts/Treasury.sol#1315)
    \]

☑- IERC20(rept).transfer(devFund,_devFundSharedAmount) (contracts/Treasury.sol#1322)
```

```
Reentrancy in Treasury._sendToMasonry(uint256) (contracts/Treasury.sol#1309-1332):

⊠External calls:

☑- IERC20(rept).transfer(daoFund,_daoFundSharedAmount) (contracts/Treasury.sol#1315)

M- IERC20(rept).transfer(devFund,_devFundSharedAmount) (contracts/Treasury.sol#1322)
M- IERC20(rept).safeApprove(masonry,0) (contracts/Treasury.sol#1328)

⊠Event emitted after the call(s):
M- MasonryFunded(now,_amount) (contracts/Treasury.sol#1331)
Reentrancy in Treasury.allocateSeigniorage() (contracts/Treasury.sol#1344-1384):

⊠External calls:

M- _updateReptPrice() (contracts/Treasury.sol#1345)
MM- IOracle(reptOracle).update() (contracts/Treasury.sol#1241)
(contracts/Treasury.sol#1350)

MM - returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/Treasury.sol#860)
MM- IBasisAsset(rept).mint(address(this),_amount) (contracts/Treasury.sol#1310)
MM- IERC20(rept).transfer(daoFund,_daoFundSharedAmount) (contracts/Treasury.sol#1315)

MMS - (success, returndata) = target.call{value: value}(data) (contracts/Treasury.sol#142)

MM- IERC20(rept).transfer(devFund,_devFundSharedAmount) (contracts/Treasury.sol#1322)
MM- IERC20(rept).safeApprove(masonry,0) (contracts/Treasury.sol#1328)
MM- IERC20(rept).safeApprove(masonry,_amount) (contracts/Treasury.sol#1329)

⊠⊠- IMasonry(masonry).allocateSeigniorage(_amount) (contracts/Treasury.sol#1330)

MExternal calls sending eth:
(contracts/Treasury.sol#1350)

MMS- (success, returndata) = target.call{value: value}(data) (contracts/Treasury.sol#142)

(contracts/Treasury.sol#1350)

MM - _sendToMasonry(reptSupply.mul(bootstrapSupplyExpansionPercent).div(10000))

(contracts/Treasury.sol#1350)
M- MasonryFunded(now,_amount) (contracts/Treasury.sol#1331)

MMS- _sendToMasonry(reptSupply.mul(bootstrapSupplyExpansionPercent).div(10000))

(contracts/Treasury.sol#1350)
Reentrancy in Treasury.allocateSeigniorage() (contracts/Treasury.sol#1344-1384):
```

```
MExternal calls:
M- _updateReptPrice() (contracts/Treasury.sol#1345)
MM- IOracle(reptOracle).update() (contracts/Treasury.sol#1241)
M- _sendToMasonry(_savedForMasonry) (contracts/Treasury.sol#1375)

⊠⊠- returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/Treasury.sol#860)

⊠⊠- IBasisAsset(rept).mint(address(this),_amount) (contracts/Treasury.sol#1310)

MM- IERC20(rept).transfer(daoFund,_daoFundSharedAmount) (contracts/Treasury.sol#1315)

MMS- (success, returndata) = target.call{value: value}(data) (contracts/Treasury.sol#142)

MM- IERC20(rept).transfer(devFund,_devFundSharedAmount) (contracts/Treasury.sol#1322)

MM - IERC20(rept).safeApprove(masonry,0) (contracts/Treasury.sol#1328)

MM- IERC20(rept).safeApprove(masonry,_amount) (contracts/Treasury.sol#1329)
MM- IMasonry(masonry).allocateSeigniorage(_amount) (contracts/Treasury.sol#1330)
MExternal calls sending eth:
M- _sendToMasonry(_savedForMasonry) (contracts/Treasury.sol#1375)

MMS - (success, returndata) = target.call{value: value}(data) (contracts/Treasury.sol#142)

⊠Event emitted after the call(s):

    DaoFundFunded(now,_daoFundSharedAmount) (contracts/Treasury.sol#1316)

MMS- _sendToMasonry(_savedForMasonry) (contracts/Treasury.sol#1375)

MasonryFunded(now,_amount) (contracts/Treasury.sol#1331)

⊠I - _sendToMasonry(_savedForMasonry) (contracts/Treasury.sol#1375)

Reentrancy in Treasury.allocateSeigniorage() (contracts/Treasury.sol#1344-1384):

⊠External calls:

MM- IOracle(reptOracle).update() (contracts/Treasury.sol#1241)

⊠⊠- returndata = address(token).functionCall(data,SafeERC20: low-level call failed)

(contracts/Treasury.sol#860)

⊠⊠- IBasisAsset(rept).mint(address(this),_amount) (contracts/Treasury.sol#1310)

MMS- (success, returndata) = target.call{value: value}(data) (contracts/Treasury.sol#142)

MM- IERC20(rept).transfer(daoFund,_daoFundSharedAmount) (contracts/Treasury.sol#1315)
MM- IERC20(rept).transfer(devFund,_devFundSharedAmount) (contracts/Treasury.sol#1322)

MM - IERC20(rept).safeApprove(masonry,0) (contracts/Treasury.sol#1328)

MM- IERC20(rept).safeApprove(masonry,_amount) (contracts/Treasury.sol#1329)

MM - IMasonry(masonry).allocateSeigniorage(_amount) (contracts/Treasury.sol#1330)

⊠External calls sending eth:

M-_sendToMasonry(_savedForMasonry) (contracts/Treasury.sol#1375)
MM- (success, returndata) = target.call{value: value}(data) (contracts/Treasury.sol#142)
```

```
M- TreasuryFunded(now,_savedForBond) (contracts/Treasury.sol#1380)
Reentrancy in Treasury.buyBonds(uint256, uint256) (contracts/Treasury.sol#1254-1281):

⊠External calls:

□ _ updateReptPrice() (contracts/Treasury.sol#1278)
MM- IOracle(reptOracle).update() (contracts/Treasury.sol#1241)

    BoughreBonds(msg.sender,_reptAmount,_bondAmount) (contracts/Treasury.sol#1280)

Reentrancy in Treasury.redeemBonds(uint256,uint256) (contracts/Treasury.sol#1283-1307):

⊠External calls:

☑- _updateReptPrice() (contracts/Treasury.sol#1304)
MM- IOracle(reptOracle).update() (contracts/Treasury.sol#1241)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#reentrancy-
vulnerabilities-3
ReptGenesisRewardPool.constructor(address,uint256,address) (contracts/
GenesisPool.sol#612-623) uses timestamp for comparisons
M- require(bool,string)(block.timestamp < _poolStartTime,late) (contracts/</p>
GenesisPool.sol#617)
ReptGenesisRewardPool.checkPoolDuplicate(IERC20) (contracts/GenesisPool.sol#630-635)
uses timestamp for comparisons

☑- pid < length (contracts/GenesisPool.sol#632)</p>

    \[ \omega - \text{require(bool,string)(poolInfo[pid].token != _token,ReptGenesisPool: existing pool?)
    \]

(contracts/GenesisPool.sol#633)
ReptGenesisRewardPool.add(uint256, IERC20, bool, uint256) (contracts/
GenesisPool.sol#638-676) uses timestamp for comparisons

☑Dangerous comparisons:

M- block.timestamp < poolStartTime (contracts/GenesisPool.sol#648)</p>
□ _ lastRewardTime == 0 (contracts/GenesisPool.sol#650)
M- _lastRewardTime < poolStartTime (contracts/GenesisPool.sol#653)</p>
GenesisPool.sol#659)
```

```
block.timestamp) (contracts/GenesisPool.sol#663-665)
ReptGenesisRewardPool.getGeneratedReward(uint256,uint256) (contracts/
GenesisPool.sol#691-702) uses timestamp for comparisons

    _ fromTime >= _toTime (contracts/GenesisPool.sol#692)

M- _toTime >= poolEndTime (contracts/GenesisPool.sol#693)
M- _toTime <= poolStartTime (contracts/GenesisPool.sol#698)</pre>
ReptGenesisRewardPool.pendingREPT(uint256,address) (contracts/GenesisPool.sol#705-716)
uses timestamp for comparisons
M- block.timestamp > pool.lastRewardTime && tokenSupply != 0 (contracts/
GenesisPool.sol#710)
ReptGenesisRewardPool.massUpdatePools() (contracts/GenesisPool.sol#719-724) uses
timestamp for comparisons

☑- pid < length (contracts/GenesisPool.sol#721)</p>
ReptGenesisRewardPool.updatePool(uint256) (contracts/GenesisPool.sol#727-747) uses
timestamp for comparisons

☑Dangerous comparisons:

ReptGenesisRewardPool.governanceRecoverUnsupported(IERC20,uint256,address) (contracts/
GenesisPool.sol#823-834) uses timestamp for comparisons
M- block.timestamp < poolEndTime + 7776000 (contracts/GenesisPool.sol#824)</p>
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#block-
timestamp
UniswapV2OracleLibrary.currentCumulativePrices(address) (contracts/Oracle.sol#497-521)
uses timestamp for comparisons
M- blockTimestampLast != blockTimestamp (contracts/Oracle.sol#512)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#block-
timestamp
RePath.unclaimedTreasuryFund() (contracts/RePATH.sol#811-816) uses timestamp for
comparisons
☑- _now > endTime (contracts/RePATH.sol#813)
M- communityFundLastClaimed >= _now (contracts/RePATH.sol#814)
RePath.unclaimedDevFund() (contracts/RePATH.sol#818-823) uses timestamp for comparisons
```

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```
    □- now > endTime (contracts/RePATH.sol#820)

M- devFundLastClaimed >= _now (contracts/RePATH.sol#821)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#block-
timestamp
RePathRewardPool.constructor(address,uint256) (contracts/RewardPool.sol#602-611) uses
timestamp for comparisons
RewardPool.sol#606)
RePathRewardPool.checkPoolDuplicate(IERC20) (contracts/RewardPool.sol#618-623) uses
timestamp for comparisons

☑- pid < length (contracts/RewardPool.sol#620)
</p>
(contracts/RewardPool.sol#621)
RePathRewardPool.add(uint256, IERC20, bool, uint256) (contracts/RewardPool.sol#626-664)
uses timestamp for comparisons
M- _lastRewardTime == 0 (contracts/RewardPool.sol#638)

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RewardPool.sol#647)
Ø- isStarted = ( lastRewardTime <= poolStartTime) || ( lastRewardTime <=</pre>
block.timestamp) (contracts/RewardPool.sol#651-653)
RePathRewardPool.getGeneratedReward(uint256,uint256) (contracts/RewardPool.sol#679-690)
uses timestamp for comparisons

    _ fromTime >= _toTime (contracts/RewardPool.sol#680)

    __toTime >= poolEndTime (contracts/RewardPool.sol#681)

M- _toTime <= poolStartTime (contracts/RewardPool.sol#686)</pre>
RePathRewardPool.pendingShare(uint256,address) (contracts/RewardPool.sol#693-704) uses
timestamp for comparisons

☑Dangerous comparisons:

M- block.timestamp > pool.lastRewardTime && tokenSupply != 0 (contracts/
RewardPool.sol#698)
RePathRewardPool.massUpdatePools() (contracts/RewardPool.sol#707-712) uses timestamp
for comparisons

□- pid < length (contracts/RewardPool.sol#709)</p>
```

```
RePathRewardPool.updatePool(uint256) (contracts/RewardPool.sol#715-735) uses timestamp
for comparisons
RePathRewardPool.governanceRecoverUnsupported(IERC20,uint256,address) (contracts/
RewardPool.sol#805-816) uses timestamp for comparisons
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#block-
timestamp
Timelock.queueTransaction(address,uint256,string,bytes,uint256) (contracts/
Timelock.sol#278-287) uses timestamp for comparisons

☑Dangerous comparisons:

☑- require(bool, string)(eta >=
getBlockTimestamp().add(delay),Timelock::queueTransaction: Estimated execution block
must satisfy delay.) (contracts/Timelock.sol#280)
Timelock.executeTransaction(address,uint256,string,bytes,uint256) (contracts/
Timelock.sol#298-323) uses timestamp for comparisons

    \[ \omega - \text{require(bool,string)(getBlockTimestamp() >= eta,Timelock::executeTransaction:
    \]

Transaction hasn't surpassed time lock.) (contracts/Timelock.sol#303)

    require(bool, string)(getBlockTimestamp() <=
</pre>
eta.add(GRACE_PERIOD), Timelock::executeTransaction: Transaction is stale.) (contracts/
Timelock.sol#304)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#block-
timestamp
Address.isContract(address) (contracts/GenesisPool.sol#26-35) uses assembly
☑- INLINE ASM (contracts/GenesisPool.sol#33)
Address._verifyCallResult(bool,bytes,string) (contracts/GenesisPool.sol#171-188) uses
assembly

☑- INLINE ASM (contracts/GenesisPool.sol#180-183)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#assembly-usage
Address.isContract(address) (contracts/Masonry.sol#437-446) uses assembly

☑- INLINE ASM (contracts/Masonry.sol#444)

Address._verifyCallResult(bool,bytes,string) (contracts/Masonry.sol#582-599) uses
assembly

☑- INLINE ASM (contracts/Masonry.sol#591-594)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#assembly-usage
```

```
Address.isContract(address) (contracts/RewardPool.sol#26-35) uses assembly
☑- INLINE ASM (contracts/RewardPool.sol#33)
Address._verifyCallResult(bool,bytes,string) (contracts/RewardPool.sol#171-188) uses
assembly
☑- INLINE ASM (contracts/RewardPool.sol#180-183)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#assembly-usage
Address.isContract(address) (contracts/Treasury.sol#49-58) uses assembly

☑- INLINE ASM (contracts/Treasury.sol#56)

Address._verifyCallResult(bool,bytes,string) (contracts/Treasury.sol#194-211) uses
assembly

☑- INLINE ASM (contracts/Treasury.sol#203-206)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#assembly-usage
Different versions of Solidity is used:
\square- Version used: ['0.6.12', '>=0.6.0<0.8.0', '^0.6.0']
\square- >=0.6.0<0.8.0 (contracts/DevFund.sol#5)
\square- >=0.6.0<0.8.0 (contracts/DevFund.sol#31)

□- ^0.6.0 (contracts/DevFund.sol#99)

□- 0.6.12 (contracts/DevFund.sol#108)

□- 0.6.12 (contracts/DevFund.sol#187)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-
pragma-directives-are-used
Different versions of Solidity is used:
☑- Version used: ['0.6.12', '>=0.6.0<0.8.0', '>=0.6.2<0.8.0']</p>
\square- >=0.6.2<0.8.0 (contracts/GenesisPool.sol#3)
\square- >=0.6.0<0.8.0 (contracts/GenesisPool.sol#191)
\square- >=0.6.0<0.8.0 (contracts/GenesisPool.sol#267)
\square- >=0.6.0<0.8.0 (contracts/GenesisPool.so1#480)

☑- 0.6.12 (contracts/GenesisPool.sol#551)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-
pragma-directives-are-used
Different versions of Solidity is used:
\square- Version used: ['0.6.12', '>=0.6.0<0.8.0', '>=0.6.2<0.8.0', '^0.6.0']
\square- >=0.6.0<0.8.0 (contracts/Masonry.sol#3)

△ ~0.6.0 (contracts/Masonry.sol#216)

☑- 0.6.12 (contracts/Masonry.sol#232)

☑- 0.6.12 (contracts/Masonry.sol#256)
```

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\boxtimes- >=0.6.0<0.8.0 (contracts/Masonry.so1#270)
\square- >=0.6.2<0.8.0 (contracts/Masonry.sol#414)
\square- 0.6.12 (contracts/Masonry.sol#602)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-
pragma-directives-are-used
Different versions of Solidity is used:

☑- Version used: ['0.6.12', '>=0.6.0<0.8.0', '^0.6.0']
</p>
\square- >=0.6.0<0.8.0 (contracts/Oracle.sol#2)
\square- >=0.6.0<0.8.0 (contracts/Oracle.sol#215)
\square- >=0.6.0<0.8.0 (contracts/Oracle.sol#238)

    ∆- ^0.6.0 (contracts/0racle.sol#394)

\boxtimes- ^0.6.0 (contracts/Oracle.sol#412)

    ∆ - ^0.6.0 (contracts/0racle.sol#485)

    □- 0.6.12 (contracts/Oracle.sol#643)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-
pragma-directives-are-used
Different versions of Solidity is used:

☑- Version used: ['0.6.12', '>=0.6.0<0.8.0']
</p>
\square- >=0.6.0<0.8.0 (contracts/Rebond.so1#3)
\boxtimes- >=0.6.0<0.8.0 (contracts/Rebond.so1#26)
\boxtimes- >=0.6.0<0.8.0 (contracts/Rebond.sol#92)

□- 0.6.12 (contracts/Rebond.sol#305)

\square- >=0.6.0<0.8.0 (contracts/Rebond.sol#341)
\boxtimes- >=0.6.0<0.8.0 (contracts/Rebond.sol#417)
\square- >=0.6.0<0.8.0 (contracts/Rebond.so1#718)

    □- 0.6.12 (contracts/Rebond.sol#757)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-
pragma-directives-are-used
Different versions of Solidity is used:

☑- Version used: ['0.6.12', '>=0.6.0<0.8.0']
</p>
\boxtimes- >=0.6.0<0.8.0 (contracts/RePATH.so1#3)
\boxtimes- >=0.6.0<0.8.0 (contracts/RePATH.so1#26)
□- >=0.6.0<0.8.0 (contracts/RePATH.sol#92)</pre>
\square- >=0.6.0<0.8.0 (contracts/RePATH.so1#305)
\square- >=0.6.0<0.8.0 (contracts/RePATH.sol#381)
```

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\square- >=0.6.0<0.8.0 (contracts/RePATH.so1#682)

    □- 0.6.12 (contracts/RePATH.sol#720)

    □- 0.6.12 (contracts/RePATH.sol#756)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-
pragma-directives-are-used
Different versions of Solidity is used:

☑- Version used: ['0.6.12', '>=0.6.0<0.8.0']
</p>
\boxtimes- >=0.6.0<0.8.0 (contracts/Rept.sol#3)
\square- >=0.6.0<0.8.0 (contracts/Rept.sol#26)
\boxtimes- >=0.6.0<0.8.0 (contracts/Rept.sol#92)
\boxtimes- >=0.6.0<0.8.0 (contracts/Rept.so1#305)

    □- 0.6.12 (contracts/Rept.sol#335)

    □- 0.6.12 (contracts/Rept.sol#493)

\boxtimes- >=0.6.0<0.8.0 (contracts/Rept.so1#503)

☑- >=0.6.0<0.8.0 (contracts/Rept.sol#579)
</p>
\square- >=0.6.0<0.8.0 (contracts/Rept.so1#880)

    □- 0.6.12 (contracts/Rept.sol#918)

    □- 0.6.12 (contracts/Rept.sol#954)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-
pragma-directives-are-used
Different versions of Solidity is used:
☑- Version used: ['0.6.12', '>=0.6.0<0.8.0', '>=0.6.2<0.8.0']</p>
\square- >=0.6.2<0.8.0 (contracts/RewardPool.sol#3)
\square- >=0.6.0<0.8.0 (contracts/RewardPool.sol#191)
\square- >=0.6.0<0.8.0 (contracts/RewardPool.sol#404)
\square- >=0.6.0<0.8.0 (contracts/RewardPool.sol#480)

☑- 0.6.12 (contracts/RewardPool.sol#550)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-
pragma-directives-are-used
Different versions of Solidity is used:

☑- Version used: ['0.6.12', '>=0.6.0<0.8.0']
</p>
\square- >=0.6.0<0.8.0 (contracts/Timelock.sol#5)

☑- 0.6.12 (contracts/Timelock.sol#220)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-
pragma-directives-are-used
Different versions of Solidity is used:
Ø- Version used: ['0.6.12', '>=0.6.0<0.8.0', '>=0.6.2<0.8.0', '^0.6.0']</pre>
```

```
\boxtimes- >=0.6.0<0.8.0 (contracts/Treasury.sol#3)
\square- >=0.6.2<0.8.0 (contracts/Treasury.sol#26)
\square- >=0.6.0<0.8.0 (contracts/Treasury.sol#214)
\square- >=0.6.0<0.8.0 (contracts/Treasury.sol#427)
\square- >=0.6.0<0.8.0 (contracts/Treasury.sol#457)

    ∆ - ^0.6.0 (contracts/Treasury.sol#523)

☑- 0.6.12 (contracts/Treasury.sol#539)

□- 0.6.12 (contracts/Treasury.sol#573)

△ ~0.6.0 (contracts/Treasury.sol#583)

□- 0.6.12 (contracts/Treasury.sol#601)

\square- >=0.6.0<0.8.0 (contracts/Treasury.sol#625)
\square- >=0.6.0<0.8.0 (contracts/Treasury.sol#701)
\square- 0.6.12 (contracts/Treasury.sol#762)
\square- >=0.6.0<0.8.0 (contracts/Treasury.sol#798)

□- 0.6.12 (contracts/Treasury.sol#868)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#different-
pragma-directives-are-used
DevFund.constructor(address[],uint256[]) (contracts/DevFund.sol#204-212) has costly
operations inside a loop:
M- totalPoints += points[a] (contracts/DevFund.sol#210)
DevFund.removeAllocation(address) (contracts/DevFund.sol#238-247) has costly operations
inside a loop:
M- totalPoints -= allocations[a].points (contracts/DevFund.sol#241)
DevFund.removeAllocation(address) (contracts/DevFund.sol#238-247) has costly operations
inside a loop:

☑- allocations.pop() (contracts/DevFund.sol#243)

DevFund.setAllocationPoints(address,uint256) (contracts/DevFund.so1#249-256) has costly
operations inside a loop:
M- totalPoints = totalPoints - allocations[a].points + points (contracts/
DevFund.so1#252)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#costly-
operations-inside-a-loop
ReptGenesisRewardPool.updatePool(uint256) (contracts/GenesisPool.sol#727-747) has
costly operations inside a loop:
M- totalAllocPoint = totalAllocPoint.add(pool.allocPoint) (contracts/
GenesisPool.so1#739)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#costly-
operations-inside-a-loop
```

```
RePathRewardPool.updatePool(uint256) (contracts/RewardPool.sol#715-735) has costly
operations inside a loop:
M- totalAllocPoint = totalAllocPoint.add(pool.allocPoint) (contracts/
RewardPool.sol#727)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#costly-
operations-inside-a-loop
Context._msgData() (contracts/DevFund.sol#22-25) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
Address.functionCall(address,bytes) (contracts/GenesisPool.sol#79-81) is never used and
should be removed
Address.functionCallWithValue(address,bytes,uint256) (contracts/
GenesisPool.sol#104-106) is never used and should be removed
Address.functionDelegateCall(address,bytes) (contracts/GenesisPool.sol#153-155) is
never used and should be removed
Address.functionDelegateCall(address, bytes, string) (contracts/GenesisPool.sol#163-169)
is never used and should be removed
Address.functionStaticCall(address,bytes) (contracts/GenesisPool.sol#129-131) is never
used and should be removed
Address.functionStaticCall(address,bytes,string) (contracts/GenesisPool.sol#139-145) is
never used and should be removed
Address.sendValue(address,uint256) (contracts/GenesisPool.sol#53-59) is never used and
should be removed
SafeERC20.safeApprove(IERC20,address,uint256) (contracts/GenesisPool.so1#511-520) is
never used and should be removed
SafeERC20.safeDecreaseAllowance(IERC20,address,uint256) (contracts/
GenesisPool.sol#527-530) is never used and should be removed
SafeERC20.safeIncreaseAllowance(IERC20,address,uint256) (contracts/
GenesisPool.sol#522-525) is never used and should be removed
SafeMath.div(uint256,uint256,string) (contracts/GenesisPool.sol#454-457) is never used
and should be removed
SafeMath.mod(uint256, uint256) (contracts/GenesisPool.sol#416-419) is never used and
should be removed
SafeMath.mod(uint256,uint256,string) (contracts/GenesisPool.sol#474-477) is never used
and should be removed
SafeMath.sub(uint256,uint256,string) (contracts/GenesisPool.sol#434-437) is never used
and should be removed
SafeMath.tryAdd(uint256, uint256) (contracts/GenesisPool.sol#288-292) is never used and
should be removed
SafeMath.tryDiv(uint256, uint256) (contracts/GenesisPool.sol#324-327) is never used and
```

should be removed

SafeMath.tryMod(uint256,uint256) (contracts/GenesisPool.sol#334-337) is never used and should be removed

SafeMath.tryMul(uint256,uint256) (contracts/GenesisPool.sol#309-317) is never used and should be removed

SafeMath.trySub(uint256,uint256) (contracts/GenesisPool.sol#299-302) is never used and should be removed

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

Babylonian.sqrt(uint256) (contracts/Oracle.sol#397-409) is never used and should be removed

FixedPoint.decode(FixedPoint.uq112x112) (contracts/Oracle.sol#464-466) is never used and should be removed

FixedPoint.div(FixedPoint.uq112x112,uint112) (contracts/Oracle.sol#443-446) is never used and should be removed

FixedPoint.encode(uint112) (contracts/Oracle.sol#433-435) is never used and should be removed

FixedPoint.encode144(uint144) (contracts/Oracle.sol#438-440) is never used and should be removed

FixedPoint.reciprocal(FixedPoint.uq112x112) (contracts/Oracle.sol#474-477) is never used and should be removed

FixedPoint.sqrt(FixedPoint.uq112x112) (contracts/Oracle.sol#480-482) is never used and should be removed

SafeMath.div(uint256, uint256) (contracts/Oracle.sol#134-137) is never used and should be removed

SafeMath.mul(uint256,uint256) (contracts/Oracle.sol#115-120) is never used and should be removed

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

ERC20.\_setupDecimals(uint8) (contracts/Rebond.sol#697-699) is never used and should be removed

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

Math.average(uint256,uint256) (contracts/Rept.sol#329-332) is never used and should be removed

Math.max(uint256,uint256) (contracts/Rept.sol#314-316) is never used and should be removed

Math.min(uint256,uint256) (contracts/Rept.sol#321-323) is never used and should be removed

SafeMath8.add(uint8,uint8) (contracts/Rept.sol#361-366) is never used and should be removed

```
SafeMath8.div(uint8,uint8) (contracts/Rept.sol#435-437) is never used and should be
removed
SafeMath8.div(uint8,uint8,string) (contracts/Rept.sol#451-457) is never used and should
be removed
SafeMath8.mod(uint8,uint8) (contracts/Rept.sol#471-473) is never used and should be
removed
SafeMath8.mod(uint8,uint8,string) (contracts/Rept.sol#487-490) is never used and should
be removed
SafeMath8.mul(uint8,uint8) (contracts/Rept.sol#409-421) is never used and should be
removed
SafeMath8.sub(uint8,uint8) (contracts/Rept.sol#378-380) is never used and should be
removed
SafeMath8.sub(uint8,uint8,string) (contracts/Rept.sol#392-397) is never used and should
be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
SafeMath.sub(uint256,uint256) (contracts/Timelock.sol#103-106) is never used and should
be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
SafeERC20.safeTransferFrom(IERC20,address,address,uint256) (contracts/
Treasury.sol#817-819) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code
Pragma version>=0.6.0<0.8.0 (contracts/DevFund.sol#5) is too complex
Pragma version>=0.6.0<0.8.0 (contracts/DevFund.sol#31) is too complex
Low level call in DevFund.call(address,uint256,bytes) (contracts/DevFund.sol#258-262):
M- (success,result) = _to.call{value: _value}(_data) (contracts/DevFund.sol#259)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-
calls
Low level call in Address.sendValue(address,uint256) (contracts/GenesisPool.sol#53-59):

    \[ \text{Success} = recipient.call{value: amount}() (contracts/GenesisPool.sol#57)
    \]

Low level call in Address.functionCallWithValue(address,bytes,uint256,string)
(contracts/GenesisPool.sol#114-121):
M- (success, returndata) = target.call{value: value}(data) (contracts/
GenesisPool.sol#119)
Low level call in Address.functionStaticCall(address,bytes,string) (contracts/
GenesisPool.sol#139-145):
```

```
Low level call in Address.functionDelegateCall(address,bytes,string) (contracts/
GenesisPool.sol#163-169):
M- (success, returndata) = target.delegatecall(data) (contracts/GenesisPool.sol#167)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-
calls
Low level call in Address.sendValue(address,uint256) (contracts/Masonry.sol#464-470):

    \[ \text{Success} = \text{recipient.call{value: amount}() (contracts/Masonry.sol#468) }
    \]

Low level call in Address.functionCallWithValue(address,bytes,uint256,string)
(contracts/Masonry.sol#525-532):
Low level call in Address.functionStaticCall(address,bytes,string) (contracts/
Masonry.sol#550-556):
Low level call in Address.functionDelegateCall(address,bytes,string) (contracts/
Masonry.so1#574-580):
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-
calls
Low level call in Address.sendValue(address,uint256) (contracts/RewardPool.sol#53-59):
Low level call in Address.functionCallWithValue(address,bytes,uint256,string)
(contracts/RewardPool.sol#114-121):
RewardPool.sol#119)
Low level call in Address.functionStaticCall(address,bytes,string) (contracts/
RewardPool.sol#139-145):
☑- (success, returndata) = target.staticcall(data) (contracts/RewardPool.sol#143)
Low level call in Address.functionDelegateCall(address,bytes,string) (contracts/
RewardPool.sol#163-169):
M- (success, returndata) = target.delegatecall(data) (contracts/RewardPool.sol#167)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-
calls
Low level call in Timelock.executeTransaction(address, uint256, string, bytes, uint256)
(contracts/Timelock.sol#298-323):
M- (success, returnData) = target.call.value(value)(callData) (contracts/
Timelock.sol#317)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-
calls
```

```
Low level call in Address.sendValue(address,uint256) (contracts/Treasury.sol#76-82):

    \[ \text{Success} = \text{recipient.call{value: amount}() (contracts/Treasury.sol#80) } \]

Low level call in Address.functionCallWithValue(address,bytes,uint256,string)
(contracts/Treasury.sol#137-144):
☑- (success, returndata) = target.call{value: value}(data) (contracts/Treasury.sol#142)
Low level call in Address.functionStaticCall(address,bytes,string) (contracts/
Treasury.sol#162-168):
Low level call in Address.functionDelegateCall(address,bytes,string) (contracts/
Treasury.sol#186-192):
M- (success, returndata) = target.delegatecall(data) (contracts/Treasury.sol#190)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-
calls
Redundant expression "this (contracts/DevFund.sol#23)" inContext (contracts/
DevFund.so1#17-26)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-
statements
Redundant expression "this (contracts/Oracle.sol#233)" inContext (contracts/
Oracle.so1#227-236)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-
statements
Redundant expression "this (contracts/Rebond.sol#21)" inContext (contracts/
Rebond.so1#15-24)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-
statements
Redundant expression "this (contracts/RePATH.sol#21)" inContext (contracts/
RePATH.so1#15-24)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-
statements
Redundant expression "this (contracts/Rept.sol#21)" inContext (contracts/
Rept.so1#15-24)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-
statements
Redundant expression "this (contracts/Treasury.sol#21)" inContext (contracts/
Treasury.sol#15-24)
```

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#redundant-statements

Variable UniswapV2OracleLibrary.currentCumulativePrices(address).priceOCumulative (contracts/Oracle.sol#501) is too similar to

UniswapV2OracleLibrary.currentCumulativePrices(address).price1Cumulative (contracts/ Oracle.sol#502)

Variable Oracle.priceOAverage (contracts/Oracle.sol#662) is too similar to Oracle.price1Average (contracts/Oracle.sol#663)

Variable Oracle.update().priceOCumulative (contracts/Oracle.sol#687) is too similar to Oracle.update().price1Cumulative (contracts/Oracle.sol#687)

Variable Oracle.twap(address,uint256).priceOCumulative (contracts/Oracle.sol#718) is too similar to Oracle.twap(address,uint256).priceOCumulative (contracts/Oracle.sol#718) Variable Oracle.twap(address,uint256).priceOCumulative (contracts/Oracle.sol#718) is too similar to Oracle.update().priceOCumulative (contracts/Oracle.sol#687)

Variable Oracle.priceOCumulativeLast (contracts/Oracle.sol#660) is too similar to Oracle.price1CumulativeLast (contracts/Oracle.sol#661)

Variable Oracle.update().priceOCumulative (contracts/Oracle.sol#687) is too similar to Oracle.twap(address,uint256).price1Cumulative (contracts/Oracle.sol#718)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-are-too-similar

Variable Treasury.setExtraFunds(address,uint256,address,uint256).\_daoFundSharedPercent (contracts/Treasury.sol#1195) is too similar to

 $Treasury.setExtraFunds (address, uint 256, address, uint 256).\_devFundSharedPercent (contracts/Treasury.sol \# 1197)$ 

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-are-too-similar

Treasury.initialize(address,address,address,address,address,uint256) (contracts/ Treasury.sol#1084-1126) uses literals with too many digits:

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#too-many-digits

ReptGenesisRewardPool.depositFeeBP (contracts/GenesisPool.sol#598) should be constant ReptGenesisRewardPool.reptPerSecond (contracts/GenesisPool.sol#594) should be constant ReptGenesisRewardPool.runningTime (contracts/GenesisPool.sol#595) should be constant Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-

```
variables-that-could-be-declared-constant
Rept.reptOracle (contracts/Rept.sol#971) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-
variables-that-could-be-declared-constant
RePathRewardPool.rePathPerSecond (contracts/RewardPool.sol#593) should be constant
RePathRewardPool.runningTime (contracts/RewardPool.sol#594) should be constant
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-
variables-that-could-be-declared-constant
renounceOwnership() should be declared external:
M- Ownable.renounceOwnership() (contracts/DevFund.sol#81-84)
transferOwnership(address) should be declared external:
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-
function-that-could-be-declared-external
set(uint256, uint256) should be declared external:
M- ReptGenesisRewardPool.set(uint256, uint256) (contracts/GenesisPool.sol#679-688)
deposit(uint256, uint256) should be declared external:
M- ReptGenesisRewardPool.deposit(uint256,uint256) (contracts/GenesisPool.sol#750-774)
withdraw(uint256, uint256) should be declared external:
M- ReptGenesisRewardPool.withdraw(uint256, uint256) (contracts/GenesisPool.sol#777-794)
emergencyWithdraw(uint256) should be declared external:
M- ReptGenesisRewardPool.emergencyWithdraw(uint256) (contracts/GenesisPool.sol#797-805)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-
function-that-could-be-declared-external
initialize(IERC20,IERC20,ITreasury) should be declared external:
Masonry.initialize(IERC20,IERC20,ITreasury) (contracts/Masonry.sol#710-728)
rewardPerShare() should be declared external:
M- Masonry.rewardPerShare() (contracts/Masonry.so1#782-784)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-
function-that-could-be-declared-external
isOperator() should be declared external:
☑- Operator.isOperator() (contracts/Oracle.sol#546-548)
transferOperator(address) should be declared external:
getCurrentEpoch() should be declared external:
```

```
M- Epoch.getCurrentEpoch() (contracts/Oracle.sol#611-613)
getPeriod() should be declared external:

☑- Epoch.getPeriod() (contracts/Oracle.sol#615-617)
getStartTime() should be declared external:
☑- Epoch.getStartTime() (contracts/Oracle.sol#619-621)
getLastEpochTime() should be declared external:
M- Epoch.getLastEpochTime() (contracts/Oracle.sol#623-625)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-
function-that-could-be-declared-external
operator() should be declared external:
☑- Operator.operator() (contracts/Rebond.sol#317-319)
name() should be declared external:

☑- ERC20.name() (contracts/Rebond.sol#474-476)

symbol() should be declared external:
☑- ERC20.symbol() (contracts/Rebond.sol#482-484)
decimals() should be declared external:

☑- ERC20.decimals() (contracts/Rebond.sol#499-501)

totalSupply() should be declared external:

☑- ERC20.totalSupply() (contracts/Rebond.sol#506-508)

transfer(address, uint256) should be declared external:
approve(address, uint256) should be declared external:
M- ERC20.approve(address, uint256) (contracts/Rebond.sol#544-547)
transferFrom(address,address,uint256) should be declared external:
increaseAllowance(address, uint256) should be declared external:
decreaseAllowance(address, uint256) should be declared external:
☑- ERC20.decreaseAllowance(address, uint256) (contracts/Rebond.sol#599-602)
mint(address, uint256) should be declared external:
M- ReBond.mint(address, uint256) (contracts/Rebond.sol#771-777)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-
function-that-could-be-declared-external
balanceOf(address) should be declared external:
M- ERC20.balanceOf(address) (contracts/RePATH.sol#477-479)
burnFrom(address, uint256) should be declared external:
☑- ERC20Burnable.burnFrom(address,uint256) (contracts/RePATH.sol#712-717)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-
function-that-could-be-declared-external
```

```
transferFrom(address,address,uint256) should be declared external:
M- Rept.transferFrom(address,address,uint256) (contracts/Rept.sol#1005-1013)
mint(address, uint256) should be declared external:
☑- Rept.mint(address,uint256) (contracts/Rept.sol#989-995)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-
function-that-could-be-declared-external
set(uint256, uint256) should be declared external:
deposit(uint256, uint256) should be declared external:
M- RePathRewardPool.deposit(uint256, uint256) (contracts/RewardPool.sol#738-756)
withdraw(uint256, uint256) should be declared external:
emergencyWithdraw(uint256) should be declared external:
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-
function-that-could-be-declared-external
setDelay(uint256) should be declared external:
M- Timelock.setDelay(uint256) (contracts/Timelock.sol#254-261)
acceptAdmin() should be declared external:
M- Timelock.acceptAdmin() (contracts/Timelock.sol#263-269)
setPendingAdmin(address) should be declared external:
M- Timelock.setPendingAdmin(address) (contracts/Timelock.sol#271-276)
queueTransaction(address,uint256,string,bytes,uint256) should be declared external:
M- Timelock.queueTransaction(address,uint256,string,bytes,uint256) (contracts/
Timelock.sol#278-287)
cancelTransaction(address, uint256, string, bytes, uint256) should be declared external:
M- Timelock.cancelTransaction(address,uint256,string,bytes,uint256) (contracts/
Timelock.sol#289-296)
executeTransaction(address,uint256,string,bytes,uint256) should be declared external:
M- Timelock.executeTransaction(address,uint256,string,bytes,uint256) (contracts/
Timelock.sol#298-323)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-
function-that-could-be-declared-external
isInitialized() should be declared external:
M- Treasury.isInitialized() (contracts/Treasury.sol#991-993)
getReptUpdatedPrice() should be declared external:
```

- $\ \ \, \square$  Treasury.getReptUpdatedPrice() (contracts/Treasury.sol#1009-1015) getReserve() should be declared external:
- $\ensuremath{\mathbb{Z}}$  Treasury.getReserve() (contracts/Treasury.sol#1018-1020) getBurnableReptLeft() should be declared external:
- $\ \ \, \square$  Treasury.getBurnableReptLeft() (contracts/Treasury.sol#1022-1034) getRedeemableBonds() should be declared external:
- $\ \ \, \square$  Treasury.getRedeemableBonds() (contracts/Treasury.sol#1036-1045) initialize(address,address,address,address,address,uint256) should be declared external:
- $\ensuremath{\mathbb{Z}}$  Treasury.initialize(address,address,address,address,address,uint256) (contracts/Treasury.sol#1084-1126)

Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#public-function-that-could-be-declared-external

. analyzed (78 contracts with 77 detectors), 452 result(s) found



