Smart Contract Security Audit V1

Oracle Integration Smart Contract Audit

Jun 28, 2025



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Background

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Project Information

• Platform: Binance Smart Chain

• Name: Oracle Integration

• Language : Solidity

• **Contract Address**: 0x7236937df8763cc36dabf422616bb4a7d12c2aed, 0xa6a0e83c6d5bef2a674c038d78657124a928dd01

• Code Source: https://github.com/TerraDharitri/drt-pREWA/tree/main/contracts

OracleIntegration

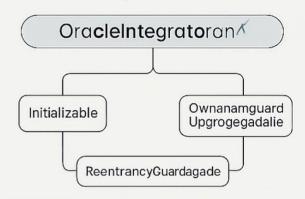
Reliable On-Chain Price Feeds for Tokens & LP Tokens

An upgrageable contract integrrating Chaini'ink orice feeds with fallback mechanisms to provide standardized

Overveo:

- Fetches reliable: tndiale; standardized prices from Chainlink with failback support and calculates LP
- Integrates with Chainlink AggregatorV3Interface for retimprice reeds
- Supports LP token prize mechanism for rellaobility, orserves

Core Components



Main Functions



Price Fetching Mechanics

- Primary source;
 Chainlink oracles
 Via Aggregatory Sirilerace
- Fallback mechanism:
 Standardization
- Checks
 validateLPricises



Main Functions

- Price Fetching
 getTokenPrice(address tokon)
 returns, token price in 18 precision
 from Chainlink or tallback
- LP Token Valuation
 getPriceFeed, registeriPToken
 setFalibackPrice...set
- Configuration
 setPriceFeed, cndrosTrocle
 setFallbackPriceupeltte

Safety & Governance

 Access Control onlyOwner resticting configuration function



- onlyLiquidity ManagerOrOnwner
- Non-Rerentrant

Validation

Chanchin->Tead

LP valuation
value
(price0 + prise)
+ amountLP

Executive Summary

According to our assessment, the customer's solidity smart contract is Well-Secured.



Automated checks are with remix IDE. All issues were performed by the team, which included the analysis of code functionality, manual audit found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the audit overview section. The general overview is presented in the Project Information section and all issues found are located in the audit overview section.

Team found 0 critical, 0 high, 0 medium, 0 low, 0 very low-level issues and 1 note in all solidity files of the contract

The files:

OracleIntegration.sol

Audit Score:

100% secure



File and Function Level Report

File in Scope:

Contract Name	SHA 256 hash	Contract Address
Maciennegranon.sor	56835e91c3d168cbc4e56 5e742c575c2117bb3bb	0x7236937df8763cc36dabf422616bb4a7d12c2 aed, 0xa6a0e83c6d5bef2a674c038d78657124a928d d01

• Contract: OracleIntegration

• Inherit: Initializable, OwnableUpgradeable, ReentrancyGuardUpgradeable

• Observation: All passed including security check

• Test Report: passed

• Score: passed

• Conclusion: passed

Function	Test Result	Type / Return Type	Score
convertToStandardPrecision	√	Read / public	Passed
getLPTokenInfo	√	Read / public	Passed
getLPTokenValue	√	Read / public	Passed
getLPTokenValueAlternativ	√	Read / public	Passed
getMinAcceptablePrice	√	Read / public	Passed
getPriceFeedInfo	√	Read / public	Passed
getStalenessThreshold	√	Read / public	Passed
validatePriceAgainstOracle	√	Read / public	Passed
owner	√	Read / public	Passed
getTokenPrice	√	Read / public	Passed
liquidityManagerAddress	√	Read / public	Passed
fetchAndReportTokenPrice	✓	Write / public	Passed
renounceOwnership	✓	Write / public	Passed
transferOwnership	√	Write / public	Passed

registerLPToken	√	Write / public	Passed
initialize	✓	Write / public	Passed
setFallbackPrice	✓	Write / public	Passed
setLiquidityManagerAddres s	√	Write / public	Passed
setMinAcceptablePrice	✓	Write / public	Passed
setPriceFeed	√	Write / public	Passed
setStalenessThreshold	√	Write / public	Passed

Issues Checking Status

SWC Attack Analysis

The Smart Contract Weakness Classification Registry (SWC Registry) is an implementation of the weakness classification scheme proposed in EIP-1470. It is loosely aligned to the terminologies and structure used in the Common Weakness Enumeration (CWE) for more info check https://swcregistry.io/

No.	Issue Description	Checking Status
136	Unencrypted Private Data On-Chain	Passed
135	Code With No Effects	Passed
134	Message call with hardcoded gas amount	Passed
133	Hash Collisions With Multiple Variable Length Arguments	Passed
132	Unexpected Ether balance	Passed
131	Presence of unused variables	Passed
130	Right-To-Left-Override control character (U+202E)	Passed
129	Typographical Error	Passed
128	DoS with block gas limit.	Passed
127	Arbitrary Jump with Function Type Variable	Passed
126	Insufficient Gas Griefing	Passed
125	Incorrect Inheritance Order	Passed
124	Write to Arbitrary Storage Location	Passed
123	Requirement Violation	Passed
122	Lack of Proper Signature Verification	Passed
121	Missing Protection against Signature Replay Attacks	Passed
120	Weak Sources of Randomness from Chain Attributes	Passed
119	Shadowing State Variables	Passed

118	Incorrect Constructor Name	Passed
117	Signature Malleability	Passed
116	Block values as a proxy for time	Not Passed
115	Authorization through tx.origin	Passed
114	Transaction Order Dependence	Passed
113	DoS with Failed Call	Passed
112	Delegatecall to Untrusted Callee	Passed
111	Use of Deprecated Solidity Functions	Passed
110	Assert Violation	Passed
109	Uninitialized Storage Pointer	Passed
108	State Variable Default Visibility	Passed
107	Reentrancy	Passed
106	Unprotected SELFDESTRUCT Instruction	Passed
105	Unprotected Ether Withdrawal	Passed
104	Unchecked Call Return Value	Passed
103	Floating Pragma	Passed
102	Outdated Compiler Version	Passed
101	Integer Overflow and Underflow	Passed
100	Function Default Visibility	Passed

Severity Definitions

Risk Level	Description			
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to tokens loss etc.			
High	High-level vulnerabilities are difficult to exploit; however, they also have significant impact on smart contract execution, e.g. public access to crucial functions			
Medium	Medium-level vulnerabilities are important to fix; however, they can't lead to tokens lose			
Low	Low-level vulnerabilities are mostly related to outdated, unused etc. code snippets, that can't have significant impact on execution			
Note	Lowest-level vulnerabilities, code style violations and info statements can't affect smart contract execution and can be ignored.			

Audit Findings

Critical:

No Critical severity vulnerabilities were found.

High:

No High severity vulnerabilities were found.

Medium:

No Medium severity vulnerabilities were found.

Low:

No Low severity vulnerabilities were found.

Very Low:

No Very Low severity vulnerabilities were found.

Notes:

Use of block.timestamp for comparisons

The value of block.timestamp can be manipulated by the miner. And conditions with strict equality is difficult to achieve - block.timestamp.

```
uint256 oldPrice = _fallbackPrices[token];
    _fallbackPrices[token] = newPrice;
    _fallbackTimestamps[token] = (newPrice == 0) ? 0 :
block.timestamp;

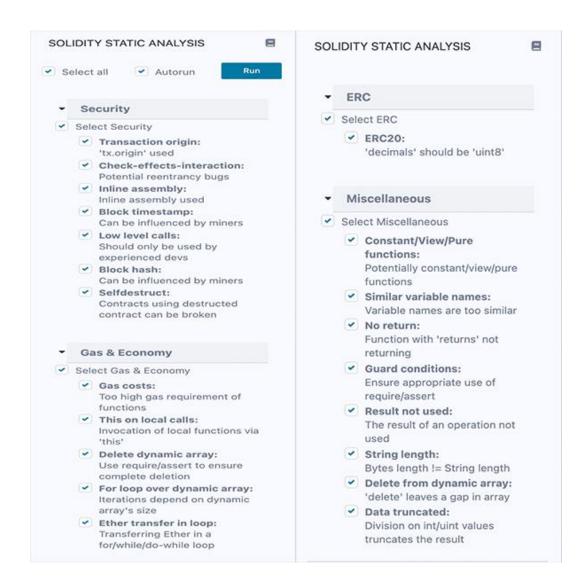
emit FallbackPriceUpdated(token, oldPrice, newPrice, fallbackTimestamps[token], msg.sender);
```

Recommendation

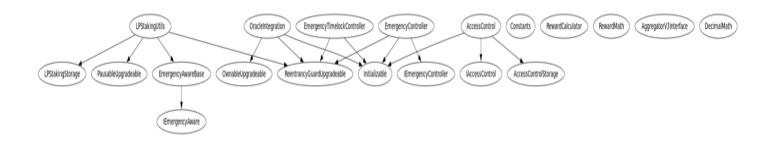
Avoid use of block.timestamp.

Automatic Testing

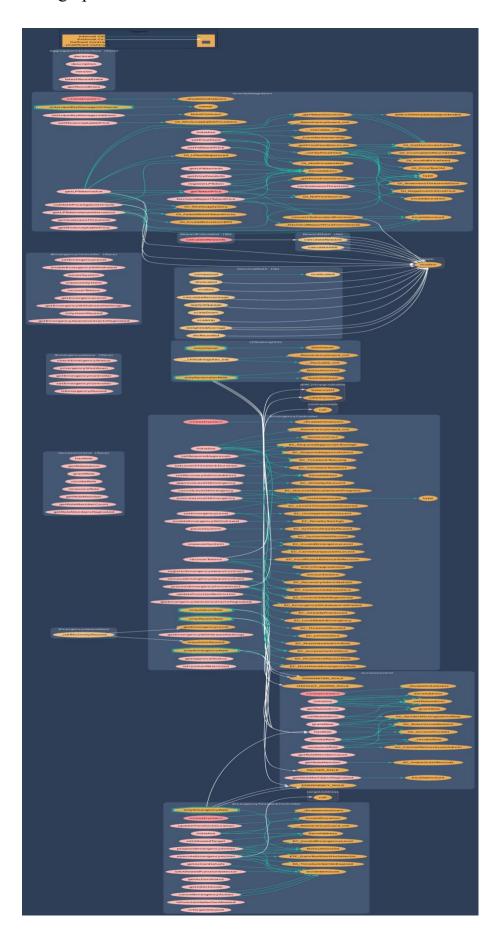
1- SOLIDITY STATIC ANALYSIS



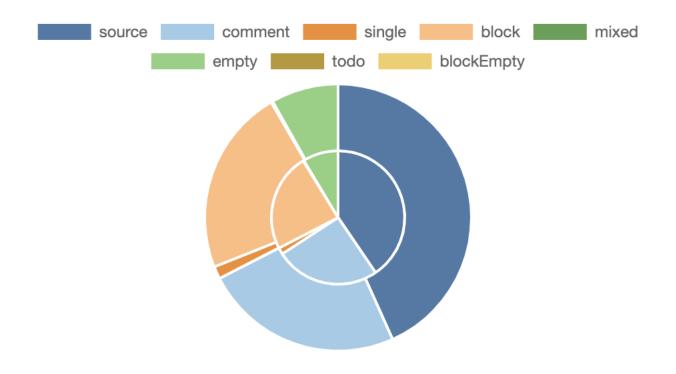
2- Inheritance graph



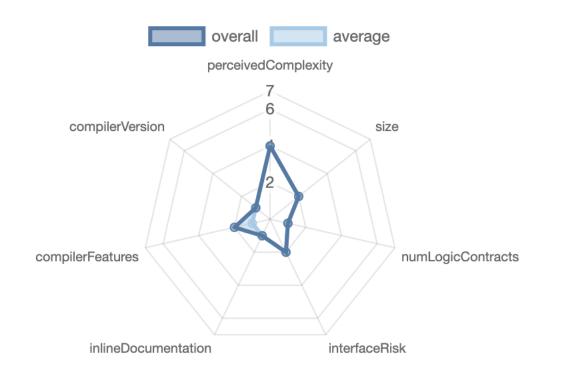
3- Call graph



Source lines



Risk level



Source units in scope

Source Units in Scope

Source Units Analyzed: 1 Source Units in Scope: 1 (100%)

Туре	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
2	contracts/oracle/OracleIntegration.sol	1	-	793	743	405	254	298	
2	Totals	1		793	743	405	254	298	

Legend: [-]

- · Lines: total lines of the source unit
- nLines: normalized lines of the source unit (e.g. normalizes functions spanning multiple lines)
- nSLOC: normalized source lines of code (only source-code lines; no comments, no blank lines)
- Comment Lines: lines containing single or block comments
- Complexity Score: a custom complexity score derived from code statements that are known to introduce code complexity (branches, loops, calls, external interfaces, ...)

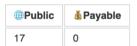
Capabilities

Components



Exposed Functions

This section lists functions that are explicitly declared public or payable. Please note that getter methods for public stateVars are not included.



External	Internal	Private	Pure	View	
15	10	5	2	11	

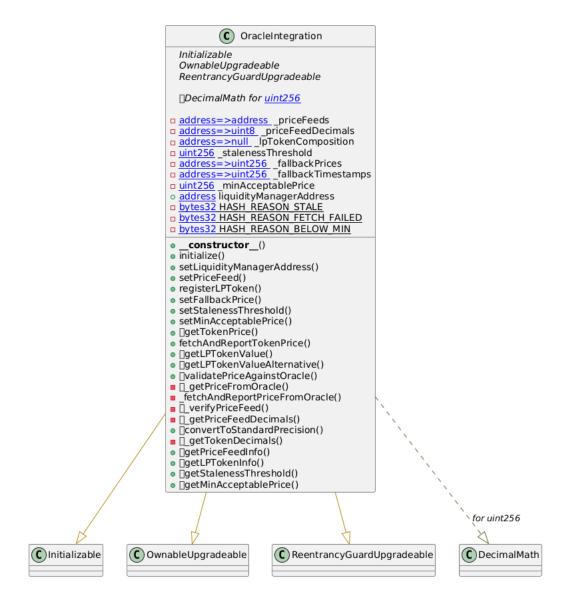
StateVariables



Capabilities



Unified Modeling Language (UML)



Functions signature

```
| Function Name | Sighash | Function Signature |
| ----- | ----- | ------ |
| initialize | cd6dc687 | initialize(address,uint256) |
| setLiquidityManagerAddress | a5dbceb2 |
setLiquidityManagerAddress(address) |
| setPriceFeed | 76e11286 | setPriceFeed(address, address) |
| registerLPToken | 840a2e1e | registerLPToken(address,address)
| setFallbackPrice | d9113d71 | setFallbackPrice(address,uint256) |
| setStalenessThreshold | fb01e7f2 | setStalenessThreshold(uint256) |
| setMinAcceptablePrice | 28b9a503 | setMinAcceptablePrice(uint256) |
| getTokenPrice | d02641a0 | getTokenPrice(address) |
| fetchAndReportTokenPrice | 037cac7a |
fetchAndReportTokenPrice(address) |
| getLPTokenValue | fa678394 |
getLPTokenValue(address, uint256, uint256, uint256, uint256) |
| getLPTokenValueAlternative | 1e592327 |
getLPTokenValueAlternative(uint256, uint256, uint256, uint256, uint256
,uint256,uint8) |
| validatePriceAgainstOracle | b39fafe5 |
validatePriceAgainstOracle(address, uint256, uint256) |
| convertToStandardPrecision | 7ad503c3 |
convertToStandardPrecision(uint256, uint8) |
| getPriceFeedInfo | 3029c35c | getPriceFeedInfo(address) |
| getLPTokenInfo | 440bbcd0 | getLPTokenInfo(address) |
| getStalenessThreshold | a6c94a73 | getStalenessThreshold() |
| getMinAcceptablePrice | 0842bc63 | getMinAcceptablePrice() |
```

Automatic general report

```
Files Description Table
| File Name | SHA-1 Hash |
|----|
| /Users/macbook/Desktop/drt-pREWA/contracts/oracle/OracleIntegration.sol
| 56835e91c3d168cbc4e565e742c575c2117bb3bb |
| /Users/macbook/Desktop/drt-pREWA/contracts/liquidity/LPStakingUtils.sol
| 7a911bbd47adf0dea8a6f15682baca0315dd624d |
| /Users/macbook/Desktop/drt-
pREWA/contracts/liquidity/storage/LPStakingStorage.sol |
e47a8a8093d56ea9d91e40f0da0daa37e9eca488
| /Users/macbook/Desktop/drt-pREWA/contracts/access/AccessControl.sol |
40163fa249f10365c03cf1fa9ddd26e2f6eb1005
| /Users/macbook/Desktop/drt-
pREWA/contracts/access/storage/AccessControlStorage.sol |
2a1f4c3d6956a89011b090a62b15254b1d720d65
| /Users/macbook/Desktop/drt-
pREWA/contracts/access/interfaces/IAccessControl.sol |
540ec54eaade1c05a650af086ebf959654ec6322 |
| /Users/macbook/Desktop/drt-pREWA/contracts/libraries/Errors.sol |
0974f6f49e3b655fa93a2792154f1b506ec03c74
| /Users/macbook/Desktop/drt-
pREWA/contracts/controllers/EmergencyController.sol |
8e73765eaa98f95db8f5eb7a40cd13b0dc845266
| /Users/macbook/Desktop/drt-
pREWA/contracts/interfaces/IEmergencyAware.sol |
be6e0a371b0a5f62d5c7dc06e5c0c4121dcc7ca1
| /Users/macbook/Desktop/drt-
pREWA/contracts/interfaces/IEmergencyController.sol |
40bc149ec8a1da85c0e4c6170b06f3a0f3b77f3b |
| /Users/macbook/Desktop/drt-
pREWA/contracts/controllers/EmergencyTimelockController.sol |
94735e88ad7f750ead488b7ad618b1486cbdb483 |
| /Users/macbook/Desktop/drt-pREWA/contracts/libraries/Constants.sol |
62835a8af9d7ab21c0cad9ca03abff6cf4e8e68f
| /Users/macbook/Desktop/drt-pREWA/contracts/utils/EmergencyAwareBase.sol
528be04847c5d3cf03edd961c878359eb3cafc6a
| /Users/macbook/Desktop/drt-
pREWA/contracts/liquidity/RewardCalculator.sol |
1d401552a8f819cb277657b7fa2c5d86f5cd6928
| /Users/macbook/Desktop/drt-pREWA/contracts/libraries/RewardMath.sol |
364dab3e9f83972a6b43d70f4c87cbf95548b475 |
| /Users/macbook/Desktop/drt-
pREWA/contracts/interfaces/AggregatorV3Interface.sol |
008fa0a63980b32bdecef492c7da1ae5b441a5c3 |
| /Users/macbook/Desktop/drt-pREWA/contracts/libraries/DecimalMath.sol |
1f5b0a2a73498dc5cb877c08aea3c971646fb4a5
```

```
Contracts Description Table
```

```
Contract |
                Type | Bases |
|:----:|:----:|:
  L | **Function Name** | **Visibility** | **Mutability**
| **Modifiers** |
| **OracleIntegration** | Implementation | Initializable,
OwnableUpgradeable, ReentrancyGuardUpgradeable |||
| L | <Constructor> | Public [ | _ NO ] | | | |
| L | initialize | External | | | | initializer |
| L | setPriceFeed | External | | OnlyOwner nonReentrant |
| L | registerLPToken | External | | OnlyLiquidityManagerOrOwner
nonReentrant |
| L | setFallbackPrice | External | | OnlyOwner nonReentrant |
 | getTokenPrice | Public | | NO | |
 L | getLPTokenValue | External | | | NO | |
 | getLPTokenValueAlternative | External | |
 L | validatePriceAgainstOracle | External |
 L | _getPriceFromOracle | Private 🔓 | | |
 L | fetchAndReportPriceFromOracle | Private 🖺 | 🔘 | |
 L | verifyPriceFeed | Private 🖺 | | |
 L | getPriceFeedDecimals | Private 🖺 | | |
 ConvertToStandardPrecision | Public | | NO | |
 L | _getTokenDecimals | Private 🖺 | | |
 | getPriceFeedInfo | External | | | NO | |
 L | getLPTokenInfo | External | | | NO| |
 L | getStalenessThreshold | External | | | | NO| |
| L | getMinAcceptablePrice | External | | | NO | |
| **LPStakingUtils** | Implementation | LPStakingStorage,
PausableUpgradeable, ReentrancyGuardUpgradeable, EmergencyAwareBase | | |
| L | LPStakingUtils init | Internal 🖰 | 🔘 | onlyInitializing |
| **LPStakingStorage** | Implementation | |||
| **AccessControl** | Implementation | Initializable,
AccessControlStorage, IAccessControl | | |
| L | initialize | External | | O | initializer |
| L | hasRole | External | | NO | |
```

```
| grantRole | External | | | NO| |
 L | renounceRole | External | | O | L | setRoleAdmin | External | | O |
                              |NON |
 L | getRoleMember | External [ | _ |NO | |
 | getRoleMemberCount | External | | NO |
 L | grantRole | Internal 🖰 | 🔘 | |
 - revokeRole | Internal 🖰 | 🌑
 L | setRoleAdmin | Internal 🖰 | 🔘 | |
**AccessControlStorage** | Implementation | |||
**IAccessControl** | Interface | ||
| L | hasRole | External | | NO | | |
| | getRoleAdmin | External | | NO | |
 | revokeRole | External | | | | NO| |
| getRoleMember | External | | NO | |
 L | getRoleMemberCount | External | | | NO | |
| L | getRoleMembersPaginated | External | NO | |
| **EmergencyController** | Implementation | Initializable,
ReentrancyGuardUpgradeable, IEmergencyController | | |
| Constructor> | Public | | NO | |
 └ | initialize | External 🖟 | 🔘 | initializer |
| L | setRequiredApprovals | External | | ( ) | onlyAdminRole |
| L | approveLevel3Emergency | External | | OnlyEmergencyRole
nonReentrant |
| L | cancelLevel3Emergency | External | | ● | onlyEmergencyRole
nonReentrant |
| L | executeLevel3Emergency | External | | OnlyEmergencyRole
nonReentrant |
nonReentrant |
| L | enableEmergencyWithdrawal | External | | OnlyEmergencyRole
nonReentrant |
| L | pauseSystem | External [ | OnlyPauserRole nonReentrant |
| L | unpauseSystem | External | | OnlyPauserRole nonReentrant | L | recoverTokens | External | OnlyEmergencyRole nonReentrant
| L | registerEmergencyAwareContract | External | |
onlyEmergencyRole |
| L | removeEmergencyAwareContract | External | | | | | | |
onlyEmergencyRole |
| L | processEmergencyForContract | External | | O | nonReentrant |
\mid \mid updateFunctionRestriction \mid External \mid \mid \mid \mid onlyEmergencyRole \mid
```

```
L | getEmergencyLevel | External | | NO | |
 L | getEmergencyWithdrawalSettings | External | | | NO | |
| L | isSystemPaused | External | | NO | |
| L | getEmergencyAwareContractsPaginated | External | | | | NO| |
 L | getApprovalStatus | External | | NO| |
 | isFunctionRestricted | External | | | NO | |
- L | resetApprovals | Internal 🖰 | 🔘 | |
**IEmergencyAware** | Interface | |||
| L | checkEmergencyStatus | External | | | NO | |
| getEmergencyController | External | | | NO | |
 L | setEmergencyController | External | | NO | |
  | isEmergencyPaused | External | | NO | | |
| **IEmergencyController** | Interface | |||
| L | setEmergencyLevel | External | | NO | |
 | enableEmergencyWithdrawal | External | | | NO | |
L | pauseSystem | External | | NO | |
L | unpauseSystem | External | | NO | |
L | recoverTokens | External | NO | |
| L | getEmergencyLevel | External | | NO | | |
| L | getEmergencyWithdrawalSettings | External [ | NO[ |
| L | isSystemPaused | External | | NO| |
| | getEmergencyAwareContractsPaginated | External | | | NO | |
| **EmergencyTimelockController** | Implementation | Initializable,
ReentrancyGuardUpgradeable |||
| L | setAllowedTarget | External | | OnlyEmergencyRole |
| L | setAllowedFunctionSelector | External | | OnlyEmergencyRole
| L | proposeEmergencyAction | External | | OnlyEmergencyRole
nonReentrant |
| L | executeEmergencyAction | External | | OnlyEmergencyRole
nonReentrant |
\mid L \mid cancelEmergencyAction \mid External \boxed{\mid} \mid OnlyEmergencyRole
nonReentrant |
| L | updateTimelockDuration | External [ | OnlyEmergencyRole | | |
| L | getActionStatus | External | | NO| |
| L | getAllActionIds | External | | NO | |
| L | getActionDetails | External | | NO| |
| L | isFunctionSelectorAllowed | External | |
| L | isTargetAllowed | External | | NO| |
| **Constants** | Library | |||
| **EmergencyAwareBase** | Implementation | IEmergencyAware |||
```

```
| **RewardCalculator** | Library | ||| | |
| L | calculateRewards | Public | | NO | |
| **RewardMath** | Library | ||
| L | calculateReward | Internal 🖺 | | | |
| **AggregatorV3Interface** | Interface | ||
| L | decimals | External | | NO | |
| L | description | External | | | NO | |
L | version | External | | NO| |
| L | latestRoundData | External | | NO | | |
| L | getRoundData | External | | | NO| |
| **DecimalMath** | Library | |||
| L | mulScaled | Internal A | | |
| L | divScaled | Internal 🖺 |
 L | mulDiv | Internal 🖺 | | |
 | calculatePercentage | Internal | |
 | applySlippage | Internal 🖺 | | |
 L | scaleUp | Internal 🖰 | | |
| L | scaleDown | Internal A | | | |
| L | compound | Internal A | | |
| L | divRounded | Internal A | | |
Legend
| Symbol | Meaning
|:----|
    Function can modify state |
   Function is payable |
```

Conclusion

The contracts are written systematically. Team found no critical issues. So, it is good to go for production.

Since possible test cases can be unlimited and developer level documentation (code flow diagram with function level description) not provided, for such an extensive smart contract protocol, we provide no such guarantee of future outcomes. We have used all the latest static tools and manual observations to cover maximum possible test cases to scan Everything.

Security state of the reviewed contract is "Well Secured".

- ✓ No volatile code.
- √ No high severity issues were found.

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as of the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against the team on the basis of what it says or doesn't say, or how team produced it, and it is important for you to conduct your own independent investigations before making any decisions. team go into more detail on this in the below disclaimer below – please make sure to read it in full.

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