

Blockchain Security | Smart Contract Audits | KYC



DGNX

Audit

Security Assessment 29.August,2022

For







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Version	Date	Description
1.0	19.August,2022	Layout projectAutomated- /Manual-Security TestingSummary
1.1	29.August,2022	• Reaudit

Network

Avalanche

Website

https://dgnx.finance/

Twitter

https://twitter.com/degenecosystem

Telegram

https://t.me/DegenXportal

Instagram

https://instagram.com/degenecosystem

Discord

https://discord.gg/KWX3kmtX

Facebook

https://www.facebook.com/people/Degen-Trader/100078427221036/

TikTok

https://www.tiktok.com/@degen_traders

OpenSea

https://opensea.io/collection/thedegentrader

RaritySniffer

https://raritysniffer.com/viewcollection/degentraders

Description

DegenX is multichain ecosystem that offers a suite of decentralized applications (dApps) and services to provide solutions for projects and individuals in the DeFi space.

Project Engagement

During the 19th of August 2022, **DGNX** team engaged Solidproof.io to audit the smart contracts that they created. The engagement was technical in nature and focused on identifying the security flaws in the design and implementation of the contracts. They provided Solidproof.io with access to their code repository and whitepaper.

Logo



Contract Links

v1.1

https://github.com/DEGENTOKENTEAM/DGNX/tree/main/contracts/dgnx

Commit: 4eb6dfb68509402376d8bfacea1391384312bc59

Vulnerability & Risk Level

Risk represents the probability that a certain source-threat will exploit vulnerability, and the impact of that event on the organization or system. Risk Level is computed based on CVSS version 3.0.

Level	Value	Vulnerability	Risk (Required Action)
Critical	9 - 10	A vulnerability that can disrupt the contract functioning in a number of scenarios, or creates a risk that the contract may be broken.	Immediate action to reduce risk level.
High	7 – 8.9	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.	Implementation of corrective actions as soon as possible.
Medium	4 – 6.9	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.	Implementation of corrective actions in a certain period.
Low	2 – 3.9	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.	Implementation of certain corrective actions or accepting the risk.
Informational	0 – 1.9	A vulnerability that have informational character but is not effecting any of the code.	An observation that does not determine a level of risk

Auditing Strategy and Techniques Applied

Throughout the review process, care was taken to evaluate the repository for security-related issues, code quality, and adherence to specification and best practices. To do so, reviewed line-by-line by our team of expert pentesters and smart contract developers, documenting any issues as there were discovered.

Methodology

The auditing process follows a routine series of steps:

- 1. Code review that includes the following:
 - Review of the specifications, sources, and instructions provided to SolidProof to make sure we understand the size, scope, and functionality of the smart contract.
 - ii) Manual review of code, which is the process of reading source code line-byline in an attempt to identify potential vulnerabilities.
 - iii) Comparison to specification, which is the process of checking whether the code does what the specifications, sources, and instructions provided to SolidProof describe.
- 2. Testing and automated analysis that includes the following:
 - i) Test coverage analysis, which is the process of determining whether the test cases are actually covering the code and how much code is exercised when we run those test cases.
 - ii) Symbolic execution, which is analyzing a program to determine what inputs causes each part of a program to execute.
- 3. Best practices review, which is a review of the smart contracts to improve efficiency, effectiveness, clarify, maintainability, security, and control based on the established industry and academic practices, recommendations, and research.
- 4. Specific, itemized, actionable recommendations to help you take steps to secure your smart contracts.

Used Code from other Frameworks/Smart Contracts (direct imports)

Imported packages:

Dependency / Import Path	Count
@openzeppelin/contracts/access/Ownable.sol	6
@openzeppelin/contracts/security/Pausable.sol	1
@openzeppelin/contracts/security/ReentrancyGuard.sol	5
@openzeppelin/contracts/token/ERC20/ERC20.sol	5
@openzeppelin/contracts/token/ERC20/extensions/ERC20Burnable.sol	1
@openzeppelin/contracts/token/ERC20/extensions/ERC20Snapshot.sol	1
@openzeppelin/contracts/token/ERC20/extensions/ERC20Votes.sol	1
@openzeppelin/contracts/token/ERC20/extensions/IERC20Metadata.sol	1
@openzeppelin/contracts/token/ERC20/extensions/draft-ERC20Permit.sol	1
@openzeppelin/contracts/token/ERC20/utils/SafeERC20.sol	3
@openzeppelin/contracts/token/ERC721/ERC721.sol	1
@openzeppelin/contracts/token/ERC721/IERC721.sol	1
@openzeppelin/contracts/token/ERC721/extensions/ERC721Enumerable.sol	1
@openzeppelin/contracts/utils/Address.sol	2
@openzeppelin/contracts/utils/Counters.sol	1
@openzeppelin/contracts/utils/Strings.sol	1
@openzeppelin/contracts/utils/math/SafeMath.sol	3
@uniswap/lib/contracts/libraries/TransferHelper.sol	1
@uniswap/v2-core/contracts/interfaces/IUniswapV2Factory.sol	2
@uniswap/v2-core/contracts/interfaces/IUniswapV2Pair.sol	2

Tested Contract Files

This audit covered the following files listed below with a SHA-1 Hash.

A file with a different Hash has been modified, intentionally or otherwise, after the security review. A different Hash could be (but not necessarily) an indication of a changed condition or potential vulnerability that was not within the scope of this review.

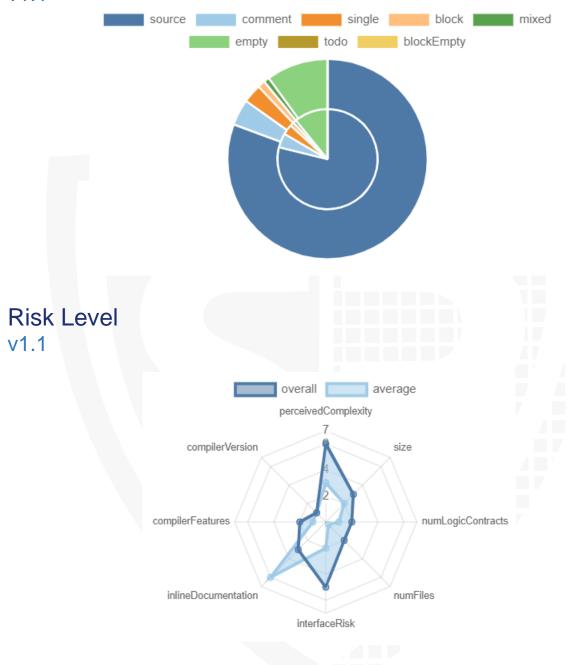
v1.1

File Name	SHA-1 Hash
contracts/dgnx/DGNXSale.sol	228b1d1ac076fba2de1ca3ae77b0f3aff0e9db4e
contracts/dgnx/DGNX.sol	629ee53bc435fa15c6273b4d2a2c6bd0c286b3f7
contracts/dgnx/DGNXPrivateSaleNFT.sol	576be63517e1fac968ef5ee7853567a0aaaf5564
contracts/dgnx/DGNXLibrary.sol	8c812bf3fbb466fb66f229539a76c756dee94058
contracts/dgnx/DGNXLocker.sol	ba14ec567dd0a07844b75b1e5ecaf86ef9b10363
contracts/dgnx/DGNXController.sol	f58876d8190e8f6aa08bd3a88c903e642a621763
contracts/dgnx/DGNXLegacyDisburser.sol	270d27b2fbe18a7f30d2b9972a1a1a82dad98378

Metrics

Source Lines

v1.1



Capabilities v1.1

Components

➢ Contracts	Libraries	Interfaces	Abstract
6	1	0	0

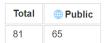
Exposed Functions

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

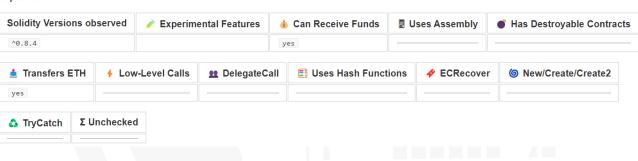


External	Internal	Private	Pure	View
62	96	3	3	29

StateVariables



Capabilities



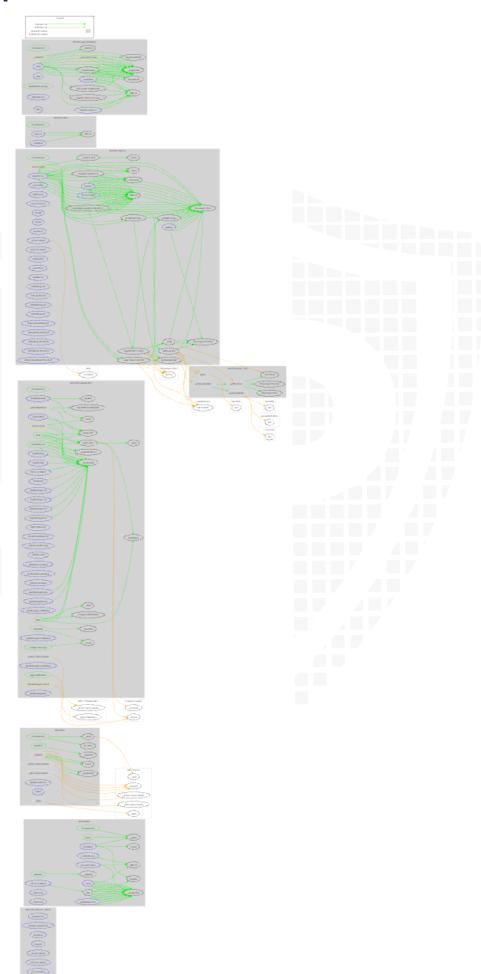
Inheritance Graph

v1.1



Call Graph

v1.1



Scope of Work/Verify Claims

The above token Team provided us with the files that needs to be tested (Github, Bscscan, Etherscan, files, etc.). The scope of the audit is the main contract (usual the same name as team appended with .sol).

We will verify the following claims:

- 1. Is contract an upgradeable
- 2. Correct implementation of Token standard
- 3. Deployer cannot mint any new tokens
- 4. Deployer cannot burn or lock user funds
- 5. Deployer cannot pause the contract
- 6. Deployer can set fees
- 7. Deployer can blacklist/antisnipe address
- 8. Overall checkup (Smart Contract Security)

ls contract an upgradeable

Name	
Is contract an upgradeable?	No



Correct implementation of Token standard

	ERC20			
Function	Description	Exist	Tested	Verified
totalSupply	Provides information about the total token supply			
balanceOf	Provides account balance of the owner's account			
transfer	Executes transfers of a specified number of tokens to a specified address			
transferFrom	Executes transfers of a specified number of tokens from a specified address			
approve	Allow a spender to withdraw a set number of tokens from a specified account			
allowance	Returns a set number of tokens from a spender to the owner			

ERC721					
Function	Description	Exist	Tested	Verified	
BalanceOf	Count all NFTs assigned to an owner				
OwnerOf	Find the owner of an NFT				
SafeTransferFrom	Transfers the ownership of an NFT from one address to another address				
SafeTransferFrom	See above - Difference is that this function has an extra data parameter				
TransferFrom	Transfer ownership of an NFT	-			
Approve	Change or reaffirm the approved address for an NFT				
SetApprovalForAll	Enable or disable approval for a third party ("operator") to manage all of `msg.sender`'s assets				
GetApproved	Get the approved address for a single NFT				
IsApprovedForAll	Query if an address is an authorized operator for another address				

SupportsInterface	Query if a contract implements an interface	
Name	Provides information about the name	
Symbol	Provides information about the symbol	
TokenURI	Provides information about the TokenUri	

Write functions of contracts v1.1

DGNX DGNXController

migrate

migration

(M) onlyAllowed

M nonReentrant

M onlyAllowed

(M) nonReentrant

- <Constructor>
 updateController
 onlyOwner
 nonReentrant
 enable
 onlyOwner
 snapshot
 onlyOwner
- DGNXLegacyDisburser
- Constructor>
 claimStart
 jisStarted
 allowedToClaim
 claim
 isStarted
 allowedToClaim
 start
 onlyOwner
 transferTokensTo
 onlyOwner
 addAddresses

M onlyOwner

recoverToken <Constructor> (M) onlyAllowed transferFees M nonReentrant (M) onlyAllowed allowContract distributeLiquidi... M onlyAllowed (M) onlyAllowed M nonReentrant M nonReentrant removeContract addPair M onlyAllowed (M) onlyAllowed setMainPair removePair M onlyOwner M onlyOwner setBurnTax addFactory M onlyOwner M onlyOwner setBackingTax removeFactory M onlyOwner M onlyOwner setLiquidityTax feeOff M onlyOwner setMarketingTax ∮ feeOn M onlyOwner M onlyAllowed

setPlatformTax

setInvestmentFu...

disableBotProtection

M onlyOwner

M onlyOwner

M onlyOwner

\$ setLiquidityThreshold
 M onlyOwner
 \$ setBackingThreshold
 M onlyOwner
 \$ setPlatformThreshold
 M onlyOwner
 \$ setInvestmentFundThreshold
 M onlyOwner

DGNXLocker

<Constructor>
deposit
M onlyOwner
withdraw
M onlyOwner

DGNXPrivateSaleNFT

startMintingBronze

stopMintingBronze

M onlyOwner

M onlyOwner

startMinting

M onlyOwner

stopMinting

M onlyOwner

<Constructor> 6 withdrawFunds **M** onlyOwner airdropMint M onlyOwner mint M whenMintingAllowed M nonReentrant mintWhitelist <a>o (M) when Minting Allowed M nonReentrant burn M nonReentrant addToWhitelist M onlyAllowed revokeFromWhitelist M onlyAllowed addWhitelistAdmin M onlyOwner revokeWhitelistAdmin M onlyOwner startMintingGold **M** onlyOwner stopMintingGold M onlyOwner startMintingSilver M onlyOwner stopMintingSilver **M** onlyOwner

DGNXSale

finishSale M onlyOwner allocateForSale **M** onlyOwner lockLeftovers M onlyOwner pause M onlyOwner unpause M onlyOwner payEntranceFee M whenNotPaused M nonReentrant 🗣 buy 💰 M whenNotPaused (M) nonReentrant claim (M) whenPaused M nonReentrant startClaim stopClaim M onlyOwner

Deployer cannot mint any new tokens

Name	Exist	Tested	Status
Deployer cannot mint			
Max / Total Supply	21.000.000		

Comments:

- The supply will be distributed to the owner's account at the time of deployment.
- The owner can start/stop minting of the tokens.
- Users can mint tokens when the minting will be allowed by the owner

Deployer cannot burn or lock user funds

Name	Exist	Tested	Status
Deployer cannot lock			
Deployer cannot burn			

Comments:

- The users can burn their own tokens.
- Deployer can lock funds in the Locker contract because both deposits and withdrawals are in control of the deployer.

Deployer cannot pause the contract

Name	Exist	Tested	Status
Deployer cannot pause			

Comments

The owner can pause and unpause the sale of Tokens



Deployer can set fees

Name	Exist	Tested	Status
Deployer can set fees over 25%			
Deployer can set fees to nearly 100% or more			



Deployer cannot blacklist/antisnipe addresses

Name	Exist	Tested	Status
Deployer can blacklist/antisnipe addresses			

Comments:

- The owner can add/remove users from the whitelist.
- The bot protection will be set to true while deployment and the owner can only disable it. Thus, once it is disabled then it can never be enabled again

Overall checkup (Smart Contract Security)

Tested	Verified

Legend

Attribute	Symbol
Verified / Checked	
Partly Verified	
Unverified / Not checked	
Not available	

Modifiers and public functions

migration

M onlyAllowed

M nonReentrant

v1.1

DGNX

- <Constructor>
 updateController
 onlyOwner
 nonReentrant
 enable
 onlyOwner
 snapshot
 onlyOwner
- DGNXLegacyDisburser
- <Constructor>
 claimStart
 _isStarted
 _allowedToClaim
 claim
 _isStarted
 _allowedToClaim
 allowedToClaim
 start
 onlyOwner
 transferTokensTo
 onlyOwner

addAddresses

M onlyOwner

DGNXController recoverToken <Constructor> M onlyAllowed transferFees M nonReentrant M onlyAllowed allowContract distributeLiquidi... M onlyAllowed M onlyAllowed M nonReentrant M nonReentrant removeContract addPair M onlyAllowed (M) onlyAllowed setMainPair removePair M onlyOwner **M** onlyOwner setBurnTax addFactory M onlyOwner M onlyOwner setBackingTax removeFactory M onlyOwner **M** onlyOwner setLiquidityTax feeOff M onlyOwner (M) onlyAllowed setMarketingTax feeOn M onlyOwner (M) onlyAllowed setPlatformTax migrate M onlyOwner M onlyAllowed setInvestmentFu.. (M) nonReentrant

M onlyOwner

M onlyOwner

disableBotProtection

\$ setLiquidityThreshold
 M onlyOwner
 \$ setBackingThreshold
 M onlyOwner
 \$ setPlatformThreshold
 M onlyOwner
 \$ setInvestmentFundThreshold
 M onlyOwner
 DGNXLocker
 \$ <Constructor>
 \$ deposit
 M onlyOwner
 \$ withdraw
 M onlyOwner

DGNXPrivateSaleNFT

startMintingBronze

stopMintingBronze

M onlyOwner

M onlyOwner

startMinting

M onlyOwner

stopMinting

M onlyOwner

<Constructor> 🐞 withdrawFunds **M** onlyOwner airdropMint M onlyOwner mint 6 M whenMintingAllowed M nonReentrant mintWhitelist M whenMintingAllowed M nonReentrant burn M nonReentrant addToWhitelist M onlyAllowed revokeFromWhitelist M onlyAllowed addWhitelistAdmin M onlyOwner revokeWhitelistAdmin M onlyOwner startMintingGold M onlyOwner stopMintingGold M onlyOwner startMintingSilver

M onlyOwner

M onlyOwner

stopMintingSilver

DGNXSale

finishSale **M** onlyOwner allocateForSale M onlyOwner lockLeftovers M onlyOwner pause **M** onlyOwner unpause M onlyOwner payEntranceFee M whenNotPaused M nonReentrant ♦ buy 🎳 M whenNotPaused M nonReentrant claim (M) whenPaused M nonReentrant startClaim **M** onlyOwner stopClaim M onlyOwner

Comments:

- The owner can set tax, modify tax and include/exclude accounts from the whitelist
- The owner will decide the bronze/silver/gold tiers for the users during the NFT private sale.
- The owner can start/stop minting of NFTs.
- Owner is able to drain the own token from PrivateSaleNFT contract.
- Owner can lock the buy function by setting the supply to 0.
- The deployer can change the controller contract anytime by calling the migrate function and transfer all tokens from controller contract to another contract
- There are multiple authorities in DGNXController.sol and some contracts that can make critical changes in the contract's parameters even after the ownership is renounced. Thus, ownership can never be completely renounced from such contracts. Moreover, the numbers of the allowed authorities has no maximum limit.



Source Units in Scope

v1.1

File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score
contracts/dgnx/DGNXSale.sol	1		163	159	132	9	133
contracts/dgnx/DGNX.sol	1		109	87	75	8	59
contracts/dgnx/DGNXPrivateSaleNFT.sol	1		483	444	365	28	227
contracts/dgnx/DGNXLibrary.sol	1		88	68	55	6	39
contracts/dgnx/DGNXLocker.sol	1		44	40	31	1	23
contracts/dgnx/DGNXController.sol	1		770	700	597	32	496
contracts/dgnx/DGNXLegacyDisburser.sol	1		362	335	293	7	168
Totals	7		2019	1833	1548	91	1145

Legend

Attribute	Description
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,)

Audit Results

AUDIT PASSED

Critical issues

No critical issues

High issues

No high issues

Medium issues

No medium issues

Low issues

Issue	File	Туре	Line	Description
#1	PrivateSaleN FT.sol	Drain contract tokens	171	Owner is able to drain the own token from contract. We recommend to prevent passing the own contract address
#2	All	Floating Pragma		The current pragma Solidity directive is "^0.8.4". Contracts should be deployed with the same compiler version and flags that they have been tested with thoroughly. Locking the pragma helps to ensure that contracts do not accidentally get deployed using other versions.

Informational issues

Issue	File	Type	Line	Description
#1	All	NatSpec documentation missing	_	If you started to comment your code, also comment all other functions, variables etc.

Audit Comments

We recommend you to use the special form of comments (NatSpec Format, Follow link for more information https://docs.soliditylang.org/en/v0.5.10/natspec-format.html) for your contracts to provide rich documentation for functions, return variables and more. This helps investors to make clear what that variables, functions etc. do.

29. August, 2022:

- There is still an owner (Owner still has not renounced ownership)
- For DGNXLegacyDisburser.sol we recommend using chainlink VRF for randomization.
- · Read the whole report and modifiers section for more information.

SWC Attacks

I D	Title	Relationships	Status
<u>SIWCI</u> 1 31 61	Unencrypted Private Data On-Chain	CWE-767: Access to Critical Private Variable via Public Method	PASSED
S W C -1 1 31 51	Code With No Effects	CWE-1164: Irrelevant Code	PASSED
S W C : 1 3 4	Message call with hardcoded gas amount	CWE-655: Improper Initialization	PASSED
S W C - 1 3 3	Hash Collisions With Multiple Variable Length Arguments	CWE-294: Authentication Bypass by Capture-replay	PASSED
S W C : 1 3 2	Unexpected Ether balance	CWE-667: Improper Locking	PASSED
<u>S</u> <u>W</u> <u>C</u> :	Presence of unused variables	CWE-1164: Irrelevant Code	PASSED

1 3 1			
S W C : 1 3 0	Right-To-Left- Override control character (U+202E)	CWE-451: User Interface (UI) Misrepresentation of Critical Information	PASSED
S W C 1 2 9	Typographical Error	CWE-480: Use of Incorrect Operator	PASSED
S W C 1 2 8	DoS With Block Gas Limit	CWE-400: Uncontrolled Resource Consumption	PASSED
S W C 1 2 7	Arbitrary Jump with Function Type Variable	CWE-695: Use of Low-Level Functionality	PASSED
S W C : 1 2 5	Incorrect Inheritance Order	CWE-696: Incorrect Behavior Order	PASSED
<u>S</u> <u>W</u> <u>C</u> :	Write to Arbitrary	CWE-123: Write-what-where Condition	PASSED

1 2 4	Storage Location		
S W C : 1 2 3	Requirement Violation	CWE-573: Improper Following of Specification by Caller	PASSED
S W C : 1 2 2	Lack of Proper Signature Verification	CWE-345: Insufficient Verification of Data Authenticity	PASSED
S W C 1 2 1	Missing Protection against Signature Replay Attacks	CWE-347: Improper Verification of Cryptographic Signature	PASSED
S <u>W</u> C 1 1 2 0	Weak Sources of Randomness from Chain Attributes	CWE-330: Use of Insufficiently Random Values	PASSED
S W C : 1 1 9	Shadowing State Variables	CWE-710: Improper Adherence to Coding Standards	PASSED

S W C : 1 1 8	Incorrect Constructor Name	CWE-665: Improper Initialization	PASSED
S W C - 1 1 7	Signature Malleability	CWE-347: Improper Verification of Cryptographic Signature	PASSED
S W C - 1 1 6	Timestamp Dependence	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
S W C - 1 1 5	Authorization through tx.origin	CWE-477: Use of Obsolete Function	PASSED
S W C 1 1 4	Transaction Order Dependence	CWE-362: Concurrent Execution using Shared Resource with Improper Synchronization ('Race Condition')	PASSED
S W C : 1 1 3	DoS with Failed Call	CWE-703: Improper Check or Handling of Exceptional Conditions	PASSED

S W C : 1 1 2	Delegatecall to Untrusted Callee	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
<u>S</u> <u>W</u> <u>C</u> : 1 1 1	Use of Deprecated Solidity Functions	CWE-477: Use of Obsolete Function	PASSED
S W C - 1 1 0	Assert Violation	CWE-670: Always-Incorrect Control Flow Implementation	PASSED
S W C - 1 0 9	Uninitialized Storage Pointer	CWE-824: Access of Uninitialized Pointer	PASSED
S W C : 1 0 8	State Variable Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED
S W C : 1 0 7	Reentrancy	CWE-841: Improper Enforcement of Behavioral Workflow	PASSED

S W C 1 0 6	Unprotected SELFDESTR UCT Instruction	CWE-284: Improper Access Control	PASSED
SWC -105	Unprotected Ether Withdrawal	CWE-284: Improper Access Control	PASSED
S W C : 1 0 4	Unchecked Call Return Value	CWE-252: Unchecked Return Value	PASSED
S W C - 1 0 3	Floating Pragma	CWE-664: Improper Control of a Resource Through its Lifetime	NOT PASSED
S W C - 1 0 2	Outdated Compiler Version	CWE-937: Using Components with Known Vulnerabilities	PASSED
S <u>W</u> C 1 0	Integer Overflow and Underflow	CWE-682: Incorrect Calculation	PASSED

S W C 1 0 0	Function Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED
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