SOLIDProof

Bring trust into your projects

Blockchain Security | Smart Contract Audits | KYC

MADE IN GERMANY

Audit

Security Assessment

21. July, 2021

For

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Overview

Network
Binance Smart Chain (BEP20)

Website
https://realdealprotocol.com/

Telegram
https://t.me/RealDealProtocol_Official

Twitter
https://twitter.com/realdealtoken

Reddit
https://www.reddit.com/r/RealDealToken

Description

The digital trading era is the unavoidable future they are facing. Just a couple of years ago the stock market trading was only accessible for wealthy people, and now anyone with a smartphone and internet connection can trade stocks instantly. In addition, the big advancements in cryptocurrencies made digital trading even more accessible and decentralized. Despite all these available opportunities, the general public still looks at digital trading as a complex and difficult piece of the financial system. Their vision is to introduce digital trading to the general public in a simple and gamified form. People of any age worldwide can learn and experience digital trading in a sandboxed, fully automated fair environment.

Project Engagement

During the 19th of July 2021, **RealDeal Team** engaged Solidproof.io to audit smart contracts that they created. The engagement was technical in nature and focused on identifying security flaws in the design and implementation of the contracts. **RealDeal Team** provided Solidproof.io with access to their code repository and whitepaper.

Logo

Contract Link

https://bscscan.com/address/0x03B0376e13A9bE6fc7353B98ad29AAc1efEc364d#code

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 aspossible.
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:
    i) 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-by-line 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 analysing 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.

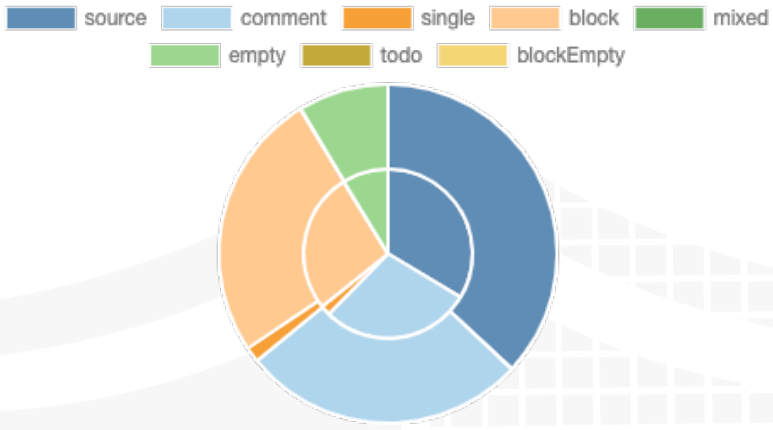
Used Code from other Frameworks/Smart Contracts (direct imports)

Imported packages:

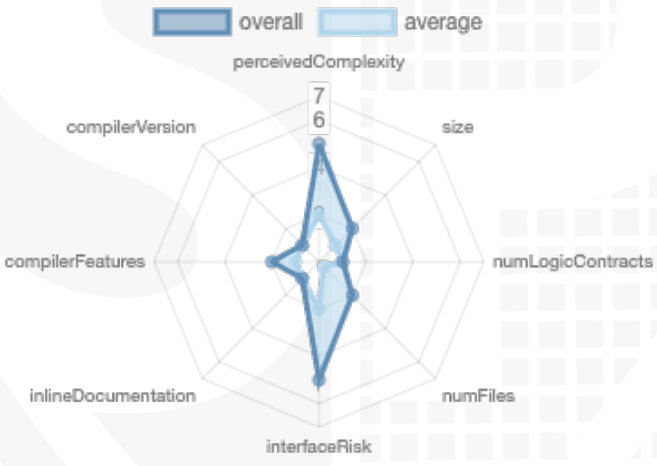
- OpenZeppelin
  - Ownable
  - SafeMatch
- Pancakeswap
  - PancakeFactory
  - PancakePair
  - PancakeRouter01
  - PancakeRouter02

Metrics

Source Lines



Risk Level



Capabilities

Solidity Versions observed	🧪 Experimental Features	💰 Can Receive Funds	🖥️ Uses Assembly	💣 Has Destroyable Contracts
`^0.8.6`		`yes`	**** (0 asm blocks)	

📩 Transfers ETH	⚡ Low-Level Calls	👥 DelegateCall	🧱 Uses Hash Functions	🪚 ECRecover	🌀 New/Create/Create2
`yes`					

CallGraph

Source Units in Scope

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
🔍	contracts/IPancake.sol	———	4	204	13	9	1	136	💰
🔍	contracts/IBEP20.sol	———	1	93	22	17	66	21	———
📝	contracts/realdeal.sol	1	———	860	816	434	269	361	💰💠
🎨	contracts/Context.sol	1	———	24	24	10	12	1	———
🔍	contracts/IRealDealCore.sol	———	1	75	9	3	46	27	———
📚	contracts/SafeMath.sol	1	———	218	218	53	150	10	———
🎨	contracts/Ownable.sol	1	———	68	68	27	33	24	———
📝📚🔍🎨	**Totals**	**4**	**6**	**1542**	**1170**	**553**	**577**	**580**	💰💠

Audit Results

AUDIT PASSED

Critical issues

- no critical issues found -

High issues

- no high issues found -

Medium issues

- no medium issues found -

Low issues

Issue	File	Type	Line	Description
#1	Main	A floating pragma is set.	1	The current pragma Solidity directive is ""^0.8.6"".
#2	Main	Unused return values (unused-return)	822-859	RealDeal._tryFeeConversion() ignores return value by _pancakeRouter.swapExactTokensForETH(_balances[address(this)],0,path,address(this),block.timestamp)
#3	Main	Missing Zero Address Validation (missing-zero-check)	394	RealDeal.setMarketingWalletAddress(address).newAddress lacks a zero-check on : • _marketingAddress = address(newAddress)
#4	Main	Missing Zero Address Validation (missing-zero-check)	462	RealDeal.setPairAddress(address).pairAddress lacks a zero-check on : • _pancakePairAddress = pairAddress

#5	Main	Call with hardcoded gas amount.	652, 848, 853	The highlighted function call forwards a fixed amount of gas. This is discouraged as the gas cost of EVM instructions may change in the future, which could break this contract's assumptions.

Informational issues

Issue	File	Type	Line	Description

#1	Main	Modifier never used	68	modifier lockFeeConversion {
				
				_isFeeConversionInProgress = true;
				_;
				
				_isFeeConversionInProgress = false;
				}

SWC Attacks

ID	Title	Relationships	Status
SWC-136	Message call with hardcoded gas amount	CWE-767: Access to Critical Private Variable via Public Method	PASSED
SWC-135	Message call with hardcoded gas amount	CWE-1164: Irrelevant Code	PASSED
SWC-134	Message call with hardcoded gas amount	CWE-655: Improper Initialization	NOT PASSED
SWC-133	Presence of unused variables	CWE-294: Authentication Bypass by Capture-replay	PASSED
SWC-132	Presence of unused variables	CWE-667: Improper Locking	PASSED
SWC-131	Presence of unused variables	CWE-1164: Irrelevant Code	PASSED
SWC-130	Right-To-Left-Override control character (U+202E)	CWE-451: User Interface (UI) Misrepresentation of Critical Information	PASSED
SWC-129	Typographical Error	CWE-480: Use of Incorrect Operator	PASSED
SWC-128	DoS With Block Gas Limit	CWE-400: Uncontrolled Resource Consumption	PASSED

SWC-127	Arbitrary Jump with Function Type Variable	CWE-695: Use of Low-Level Functionality	PASSED
SWC-125	Incorrect Inheritance Order	CWE-696: Incorrect Behavior Order	PASSED
SWC-124	Write to Arbitrary Storage Location	CWE-123: Write-what-where Condition	PASSED
SWC-123	Requirement Violation	CWE-573: Improper Following of Specification by Caller	PASSED
SWC-122	Lack of Proper Signature Verification	CWE-345: Insufficient Verification of Data Authenticity	PASSED
SWC-121	Missing Protection against Signature Replay Attacks	CWE-347: Improper Verification of Cryptographic Signature	PASSED
SWC-120	Weak Sources of Randomness from Chain Attributes	CWE-330: Use of Insufficiently Random Values	PASSED
SWC-119	Shadowing State Variables	CWE-710: Improper Adherence to Coding Standards	PASSED
SWC-118	Incorrect Constructor Name	CWE-665: Improper Initialization	PASSED
SWC-117	Signature Malleability	CWE-347: Improper Verification of Cryptographic Signature	PASSED

SWC-116	Timestamp Dependence	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
SWC-115	Authorization through tx.origin	CWE-477: Use of Obsolete Function	PASSED
SWC-114	Transaction Order Dependence	CWE-362: Concurrent Execution using Shared Resource with Improper Synchronization ('Race Condition')	PASSED
SWC-113	DoS with Failed Call	CWE-703: Improper Check or Handling of Exceptional Conditions	PASSED
SWC-112	Delegatecall to Untrusted Callee	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
SWC-111	Use of Deprecated Solidity Functions	CWE-477: Use of Obsolete Function	PASSED
SWC-110	Assert Violation	CWE-670: Always-Incorrect Control Flow Implementation	PASSED
SWC-109	Uninitialized Storage Pointer	CWE-824: Access of Uninitialized Pointer	PASSED
SWC-108	State Variable Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED
SWC-107	Reentrancy	CWE-841: Improper Enforcement of Behavioral Workflow	PASSED
SWC-106	Unprotected SELFDESTRUCT Instruction	CWE-284: Improper Access Control	PASSED

SWC-105	Unprotected Ether Withdrawal	CWE-284: Improper Access Control	PASSED
SWC-104	Unchecked Call Return Value	CWE-252: Unchecked Return Value	PASSED
SWC-103	Floating Pragma	CWE-664: Improper Control of a Resource Through its Lifetime	NOT PASSED
SWC-102	Outdated Compiler Version	CWE-937: Using Components with Known Vulnerabilities	PASSED
SWC-101	Integer Overflow and Underflow	CWE-682: Incorrect Calculation	PASSED
SWC-100	Function Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED

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