



SOLIDProof
Bring trust into your projects

Blockchain Security | Smart Contract Audits | KYC

MADE IN GERMANY

Juni Audit

Security Assessment
19. August, 2022

For



SolidProof_io



@solidproof_io

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Version	Date	Description
1.0	19. August 2022	<ul style="list-style-type: none">• Layout project• Automated- /Manual-Security Testing• Summary

Network

Binance Smart Chain (BEP20)

Website

<https://www.juni.gg/about>

<https://juni.gg/>

Telegram

<https://t.me/JackpotUniverse>

Twitter

<https://twitter.com/JUNIBSC>

Facebook

<https://www.facebook.com/JackpotUniverse-103182732442228>



Description

JUNI is a **completely new approach** for jackpot projects on blockchain. A **never before seen** smart contract which not only **increases the price floor** for its token constantly, but also **rewards players** of the Jackpot Game with **huge prizes in BNB**.

7 seperate and unique smart contracts are running simultaneously to give our holders and players a **seemless user experience** in the JUNI Ecosystem.

The JUNI team has proven itself as first movers inside the BSC community.

Project Engagement

During the 18th of August 2022, **JUNI 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. They provided Solidproof.io with access to their code repository and whitepaper.

Logo



Contract Link

v1.0

- Provided as files

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:
 - 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:

Dependency / Import Path	Count
@openzeppelin/contracts/token/ERC20/IERC20.sol	2
@openzeppelin/contracts/utils/Address.sol	3
@openzeppelin/contracts/utils/structs/EnumerableSet.sol	1
@uniswap/v2-core/contracts/interfaces/IUniswapV2Factory.sol	1
@uniswap/v2-core/contracts/interfaces/IUniswapV2Pair.sol	1
@uniswap/v2-periphery/contracts/interfaces/IUniswapV2Router02.sol	2

Tested Contract Files

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

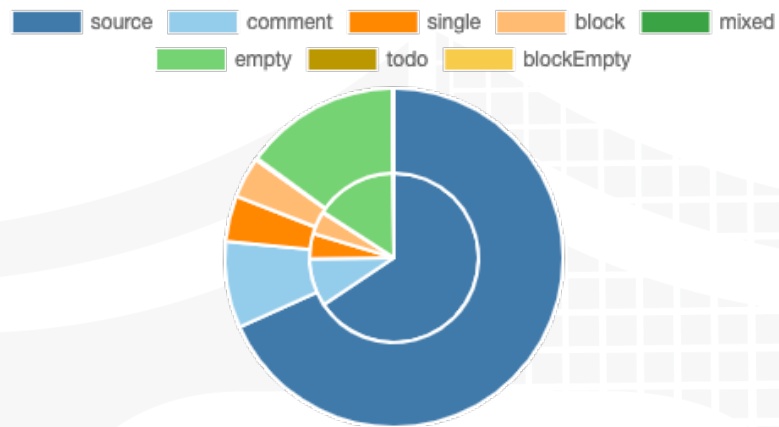
A file with a different Hash has been modified, intentionally or otherwise, after the security review. A different Hash could be (but not necessarily) an indication of a changed condition or potential vulnerability that was not within the scope of this review.

v1.0

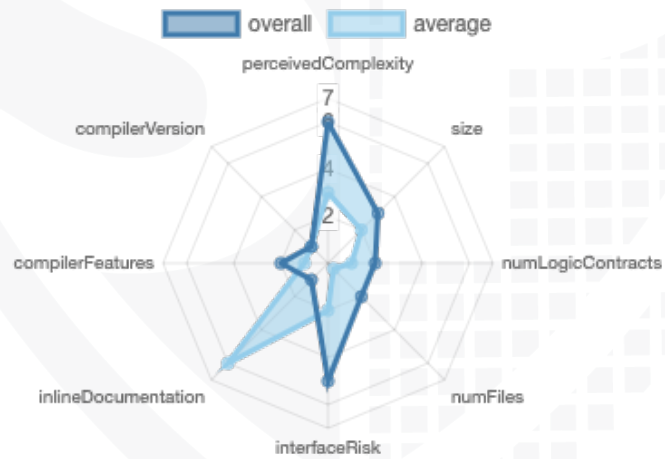
File Name	SHA-1 Hash
contracts/Treasury.sol	22900d01f97428a23abdd3aec894158e31ae7de
contracts/JackpotToken.sol	12ffa188c155c51d4dab2f194dc725f684ecdd82
contracts/IJackpotGuard.sol	6d5b444e9960514f5a4c3d364e6d42bf38deecdd
contracts/JackpotUniverse.sol	5394d93e2fc6257dc424e15c9ae2af47aab802a2
contracts/Ownable.sol	d454cd2693b50bf37253d76510e246fd9d7cffb0
contracts/IJackpotBroker.sol	bb39093e412b6a5d1d99d248c41cb65f90feef9c

Metrics

Source Lines v1.0



Risk Level v1.0



Capabilities

Components

Version	Contracts	Libraries	Interfaces	Abstract
1.0	2	0	2	3

Exposed Functions

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

Version	Public	Payable
1.0	99	5

Version	External	Internal	Private	Pure	View
1.0	46	103	12	6	37

State Variables

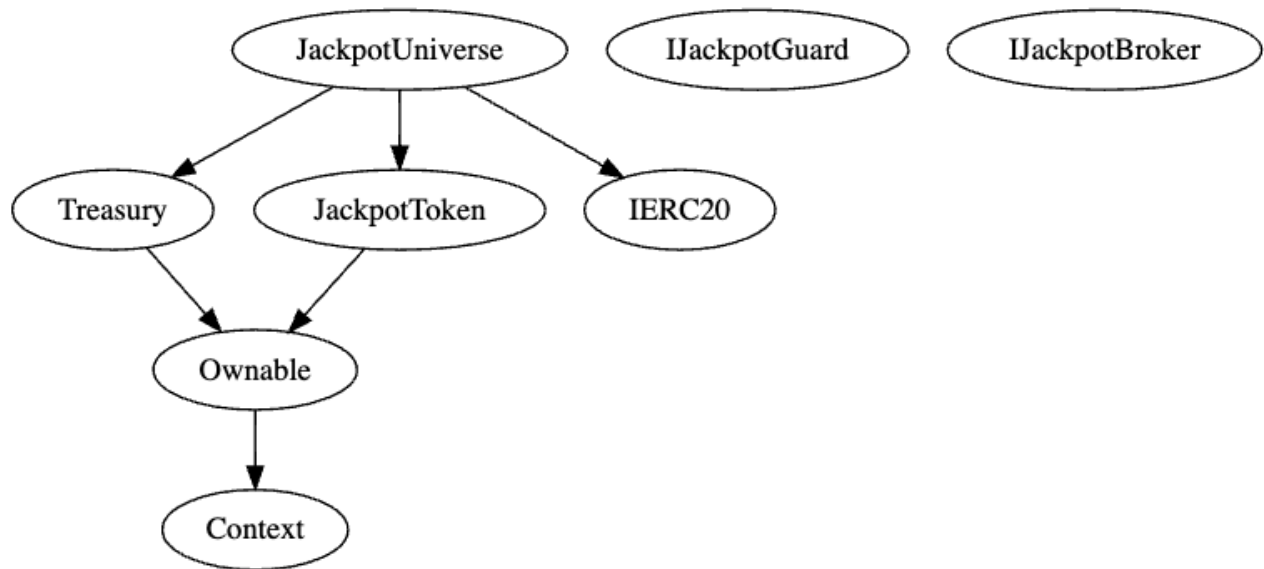
Version	Total	Public
1.0	62	15

Capabilities

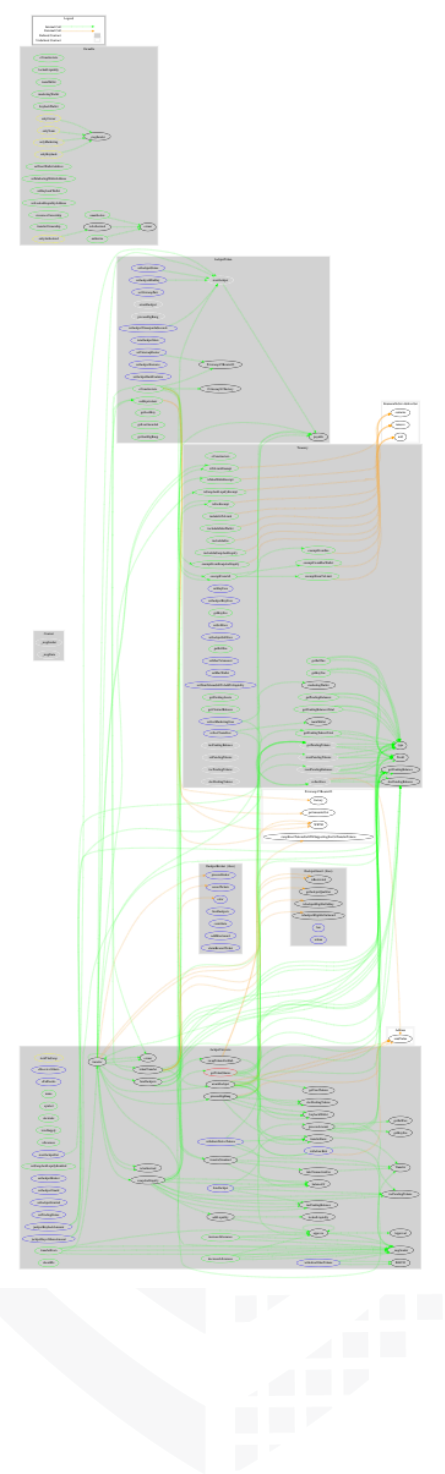
Version	Solidity Versions observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts
1.0	0.8.16		yes		

Version	Transfers ETH	Low-Level Calls	DelegateCall	Uses Hash Functions	EC Recover	New/Create/Create2
1.0	yes					

Inheritance Graph v1.0



CallGraph
v1.0



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 cannot set fees
7. Deployer cannot blacklist/antisnipe addresses
8. Overall checkup (Smart Contract Security)



Is 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	✓	✓	✓

Write functions of contract v1.0

approve	setJackpotStat...
authorize	setJackpotTim...
collectMarketi...	setLockedLiqui...
collectTeamFe...	setMarketing...
decreaseAllow...	setMaxTxAmo...
exemptFromAll	setMaxWallet
exemptFromFee	setNumTokens...
exemptFromM...	setSellFees
exemptFromS...	setSwapAndLi...
exemptFromTx...	setTeamWalle...
fundJackpot	setTradingStat...
includeInFee	setUniswapPair
includeInMax...	setUniswapRo...
includeInSwap...	transfer
includeInTxLimit	transferFrom
increaseAllow...	transferOwner...
renounceOwn...	unauthorize
resetJackpotExt	withdrawBnb
setBuybackW...	withdrawNati...
setBuyFees	withdrawOthe...
setJackpotBro...	
setJackpotBuy...	
setJackpotFeat...	
setJackpotGua...	
setJackpotHar...	
setJackpotLimi...	
setJackpotMin...	
setJackpotSel...	

Deployer cannot mint any new tokens

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



Deployer cannot burn or lock user funds

Name	Exist	Tested	Status
Deployer cannot lock	✓	✓	✗
Deployer cannot burn	-	-	-

Comments:

v1.0

- Owner can lock user funds by
 - Setting tradingOpen to false

Deployer cannot pause the contract

Name	Exist	Tested	Status
Deployer cannot pause	✓	✓	✗

Comments:

v1.0

- Owner can pause contract by setting tradingOpen to false



Deployer cannot set fees

Name	Exist	Tested	Status
Deployer cannot set fees over 25%	✓	✓	✓
Deployer cannot set fees to nearly 100% or to 100%	✓	✓	✓



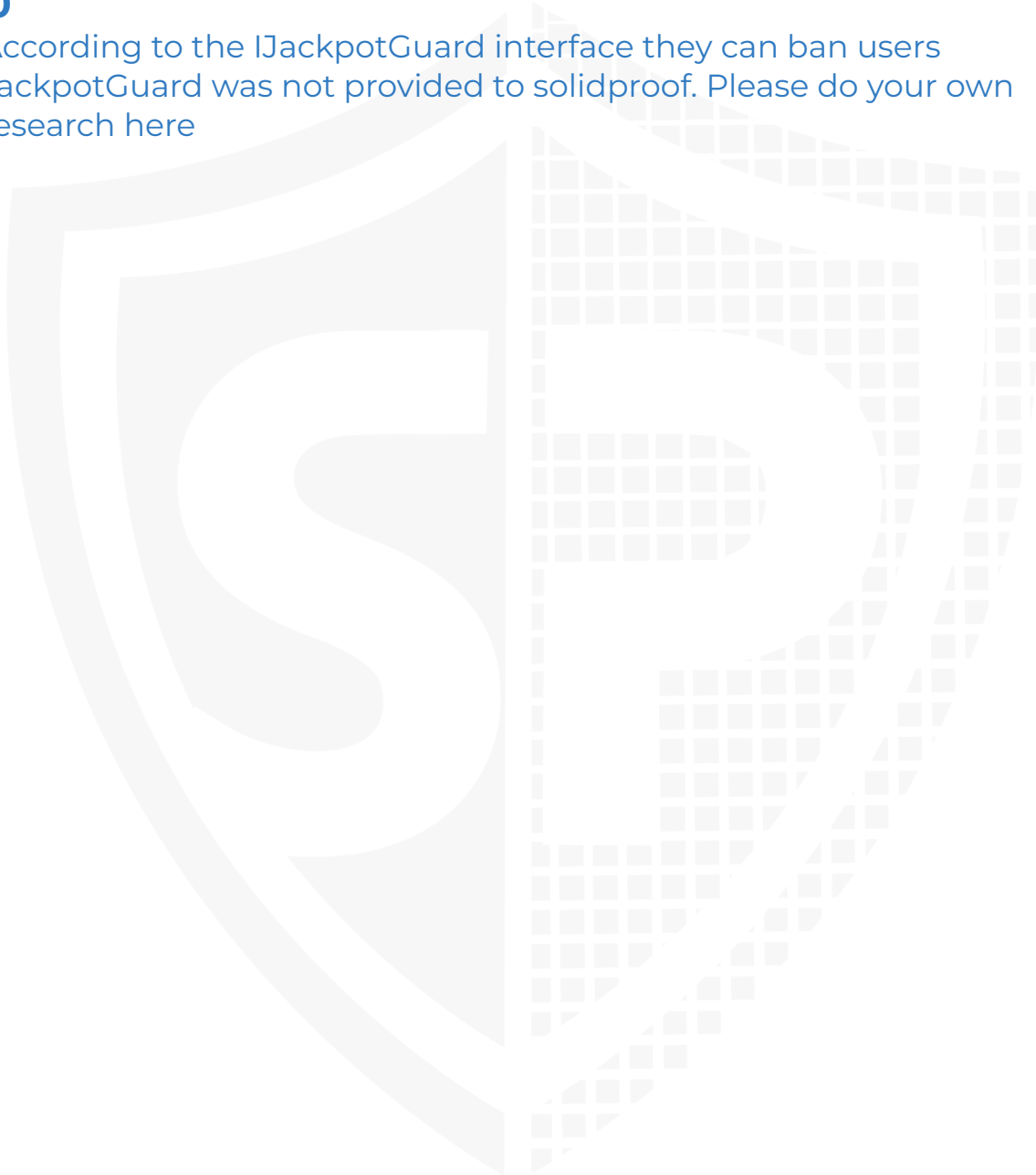
Deployer can blacklist/antisnipe addresses

Name	Exist	Tested	Status
Deployer cannot blacklist/antisnipe addresses	✓	✓	✗

Comments:

v1.0

- According to the IJackpotGuard interface they can ban users
- JackpotGuard was not provided to solidproof. Please do your own research here



Overall checkup (Smart Contract Security)

Tested	Verified
✓	✓

Legend

Attribute	Symbol
Verified / Checked	✓
Partly Verified	⚠
Unverified / Not checked	✗
Not available	—

Modifiers and public functions

v1.0

Treasury

✓	♦	exemptFromTxLimit	
	Ⓜ	onlyAuthorized	
✓	♦	includeInTxLimit	
	Ⓜ	onlyAuthorized	
✓	♦	exemptFromMaxWallet	
	Ⓜ	onlyAuthorized	
✓	♦	includeInMaxWallet	
	Ⓜ	onlyAuthorized	
✓	♦	exemptFromFee	
	Ⓜ	onlyAuthorized	
✓	♦	includeInFee	
	Ⓜ	onlyAuthorized	
✓	♦	exemptFromSwapAndLiquify	
	Ⓜ	onlyOwner	
✓	♦	includeInSwapAndLiquify	
	Ⓜ	onlyOwner	
✓	♦	exemptFromAll	
	Ⓜ	onlyOwner	
✓	♦	setBuyFees	
	Ⓜ	onlyAuthorized	
✓	♦	setJackpotBuyFees	
	Ⓜ	onlyAuthorized	
✓	♦	setSellFees	
	Ⓜ	onlyAuthorized	
✓	♦	setJackpotSellFees	
	Ⓜ	onlyAuthorized	
✓	♦	setMaxTxAmount	
	Ⓜ	onlyAuthorized	
✓	♦	setMaxWallet	
	Ⓜ	onlyAuthorized	
✓	♦	setNumTokensSellToAddToLiquidity	
	Ⓜ	onlyAuthorized	
✓	♦	collectMarketingFees	
	Ⓜ	onlyMarketing	
✓	♦	collectTeamFees	
	Ⓜ	onlyTeam	

JackpotUniverse

	♦	transfer	
	♦	approve	
	♦	transferFrom	
	♦	increaseAllowance	
	♦	decreaseAllowance	
✓	♦	fundJackpot 💰	
	Ⓜ	onlyAuthorized	
✓	♦	setSwapAndLiquifyEnabled	
	Ⓜ	onlyOwner	
✓	♦	setJackpotBroker	
	Ⓜ	onlyOwner	
✓	♦	setJackpotGuard	
	Ⓜ	onlyOwner	
✓	♦	setJackpotLimited	
	Ⓜ	onlyOwner	
✓	♦	withdrawBnb	
	Ⓜ	onlyOwner	
✓	♦	withdrawNativeTokens	
	Ⓜ	onlyOwner	
✓	♦	withdrawOtherTokens	
	Ⓜ	onlyOwner	
✓	♦	setTradingStatus	
	Ⓜ	onlyOwner	
✓	♦	resetJackpotExt	
	Ⓜ	onlyAuthorized	

Ownable

✓	🔹	setTeamWalletAddress	
	👤	onlyOwner	
✓	🔹	setMarketingWalletAddress	
	👤	onlyOwner	
✓	🔹	setBuybackWallet	
	👤	onlyOwner	
✓	🔹	setLockedLiquidityAddress	
	👤	onlyOwner	
✓	🔹	renounceOwnership	
	👤	onlyOwner	
✓	🔹	transferOwnership	
	👤	onlyOwner	
✓	🔹	authorize	
	👤	onlyOwner	
✓	🔹	unauthorize	
	👤	onlyOwner	

JackpotToken

✓	🔹	setUniswapRouter	
	👤	onlyOwner	
✓	🔹	setUniswapPair	
	👤	onlyOwner	
✓	🔹	setJackpotStatus	
	👤	onlyAuthorized	
✓	🔹	setJackpotMinBuy	
	👤	onlyAuthorized	
✓	🔹	setJackpotFeatures	
	👤	onlyAuthorized	
✓	🔹	setJackpotHardFeatures	
	👤	onlyAuthorized	
✓	🔹	setJackpotTimespanInSeconds	
	👤	onlyAuthorized	

Note: Not listed functions/modifiers were provided from implemented libraries

Comments

- Deployer can set following state variables without any limitations
 - JackpotToken
 - jackpotTimespan
 - jackpotHardLimit
 - jackpotMinBuy
 - Treasury
 - numTokensSellToAddToLiquidity
- Deployer can enable/disable following state variables
 - JackpotToken
 - jackpotEnabled
 - Treasury
 - _feeExempt
 - _maxWalletExempt
 - _txLimitExempt

- `_swapExempt`
- Ownable
 - `authorizations`
- JackpotUniverse
 - `tradingOpen`
 - `jackpotLimited`
 - `swapAndLiquifyEnabled`
- Deployer can set following addresses
 - JackpotToken
 - `uniswapV2Pair`
 - `uniswapV2Router`
 - Ownable
 - `_owner`
 - `_lockedLiquidity`
 - Can be set once only
 - `_buybackWallet`
 - `_marketingWallet`
 - `_teamWallet`
 - JackpotUniverse
 - `jGuard`
 - `jBroker`
- Existing Modifiers
 - `onlyAuthorized`
 - `onlyBuyback`
 - `onlyMarketing`
 - `onlyTeam`
 - `onlyOwner`
 - `lockTheSwap`
- There are several authorities which are authorized to call some functions, that means, if the owner is renounced, another address is still authorized to call functions
 - Be aware of this
- JackpotUniverse
 - Authorized address are able to reset Jackpot (will set `_lastBuyTimestamp` to 0 and `_lastBuyer` to contract address)
 - `fundJackpot` function
 - Authorized addresses are able to call `fundJackpot` with a `msg.value` of 0 in L247. If it is necessary to send an amount of bnb, we recommend you to implement a “require statement” that this function is only callable when the











caller pays some bnb like it was applied to the fallback/
receive function

- awardJackpot/fundJackpots
 - We recommend you to check the balances before go deeper in the awardJackpot function
- AddLiquidity
 - Be aware of the lockedLiquidity address. The “_lockedLiquidity” contract is not locked in this case because it is just a wallet address where the liquidity will be transferred. The owner can drain the liquidity out of the contract if it has a private key. Also he/she is able to change the address.
- JackpotToken
 - jackpotCashout
 - If value is set to 0 they bnb/tokens amount of buyBack (JackpotUniverse.sol, function: jackpotBuybackAmount L434) will always be 0 and also in the awardJackpot function L486 it will be 0 for tokens out L488 and cashedOut L487. The same applies to the “jackpotBuyerShare” value
 - We recommend you to implement a range above 0 and below MAX_PCT to make sure, that the lastBuyer investor can get an award
 -

Please check if an OnlyOwner or similar restrictive modifier has been forgotten.

Source Units in Scope

v1.0

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
	contracts/Treasury.sol	1	————	478	449	342	14	238	————
	contracts/JackpotToken.sol	1	————	251	210	159	11	109	————
	contracts/JackpotGuard.sol	————	1	29	6	3	1	17	————
	contracts/JackpotUniverse.sol	1	————	771	705	515	80	380	
	contracts/Ownable.sol	2	————	250	234	142	61	83	————
	contracts/JackpotBroker.sol	————	1	76	49	42	1	21	
	Totals	5	2	1855	1653	1203	168	848	

Legend

Attribute	Description
Lines	total lines of the source unit
nLines	normalised lines of the source unit (e.g. normalises functions spanning multiple lines)
nSLOC	normalised 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	Type	Line	Description
#1	Ownable	Missing Zero Address Validation (missing-zero-check)	66, 175	Check that the address is not zero
#2	Jackpot Universe	Local variables shadowing	169, 175, 188, 192, 195, 196,	Rename the local variables that shadow another component
#3	Jackpot Universe	Missing Events Arithmetic	416	Emit an event for critical parameter changes
#4	Jackpot Token	Missing Events Arithmetic	105, 113	Emit an event for critical parameter changes

Informational issues

Issue	File	Type	Line	Description
-------	------	------	------	-------------

#1	Ownable	Functions that are not used	20	Remove unused functions. Before removing check the function, it could be possible, that you forget to implement it into the contract
#2	Ownable	Unused state variables	19, 22	Remove unused state variables
#3	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.

. August 2022:

- Following files were not provided to solidproof
 - JackpotGuard
- We recommend you to do your own research here.
- Read whole report and modifiers section for more information, don't skip that section!
- No test cases were provided by the team

SWC Attacks

ID	Title	Relationships	Status
SW C-1 36	Unencrypted Private Data On-Chain	CWE-767: Access to Critical Private Variable via Public Method	PASSED
SW C-1 35	Code With No Effects	CWE-1164: Irrelevant Code	PASSED
SW C-1 34	Message call with hardcoded gas amount	CWE-655: Improper Initialization	PASSED
SW C-1 33	Hash Collisions With Multiple Variable Length Arguments	CWE-294: Authentication Bypass by Capture-replay	PASSED
SW C-1 32	Unexpected Ether balance	CWE-667: Improper Locking	PASSED
SW C-1 31	Presence of unused variables	CWE-1164: Irrelevant Code	NOT PASSED
SW C-1 30	Right-To-Left-Override control character (U+202E)	CWE-451: User Interface (UI) Misrepresentation of Critical Information	PASSED
SW C-1 29	Typographical Error	CWE-480: Use of Incorrect Operator	PASSED
SW C-1 28	DoS With Block Gas Limit	CWE-400: Uncontrolled Resource Consumption	PASSED

SW C-1 27	Arbitrary Jump with Function Type Variable	CWE-695: Use of Low-Level Functionality	PASSED
SW C-1 25	Incorrect Inheritance Order	CWE-696: Incorrect Behavior Order	PASSED
SW C-1 24	Write to Arbitrary Storage Location	CWE-123: Write-what-where Condition	PASSED
SW C-1 23	Requirement Violation	CWE-573: Improper Following of Specification by Caller	PASSED
SW C-1 22	Lack of Proper Signature Verification	CWE-345: Insufficient Verification of Data Authenticity	PASSED
SW C-1 21	Missing Protection against Signature Replay Attacks	CWE-347: Improper Verification of Cryptographic Signature	PASSED
SW C-1 20	Weak Sources of Randomness from Chain Attributes	CWE-330: Use of Insufficiently Random Values	PASSED
SW C-11 9	Shadowing State Variables	CWE-710: Improper Adherence to Coding Standards	NOT PASSED
SW C-11 8	Incorrect Constructor Name	CWE-665: Improper Initialization	PASSED
SW C-11 7	Signature Malleability	CWE-347: Improper Verification of Cryptographic Signature	PASSED

SW C-11 6	Timestamp Dependence	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
SW C-11 5	Authorization through tx.origin	CWE-477: Use of Obsolete Function	PASSED
SW C-11 4	Transaction Order Dependence	CWE-362: Concurrent Execution using Shared Resource with Improper Synchronization ('Race Condition')	PASSED
SW C-11 3	DoS with Failed Call	CWE-703: Improper Check or Handling of Exceptional Conditions	PASSED
SW C-11 2	Delegatecall to Untrusted Callee	CWE-829: Inclusion of Functionality from Untrusted Control Sphere	PASSED
SW C-11 1	Use of Deprecated Solidity Functions	CWE-477: Use of Obsolete Function	PASSED
SW C-11 0	Assert Violation	CWE-670: Always-Incorrect Control Flow Implementation	PASSED
SW C-1 09	Uninitialized Storage Pointer	CWE-824: Access of Uninitialized Pointer	PASSED
SW C-1 08	State Variable Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED
SW C-1 07	Reentrancy	CWE-841: Improper Enforcement of Behavioral Workflow	PASSED
SW C-1 06	Unprotected SELFDESTRUCT Instruction	CWE-284: Improper Access Control	PASSED

SW C-1 05	Unprotected Ether Withdrawal	CWE-284: Improper Access Control	PASSED
SW C-1 04	Unchecked Call Return Value	CWE-252: Unchecked Return Value	PASSED
SW C-1 03	Floating Pragma	CWE-664: Improper Control of a Resource Through its Lifetime	PASSED
SW C-1 02	Outdated Compiler Version	CWE-937: Using Components with Known Vulnerabilities	PASSED
SW C-1 01	Integer Overflow and Underflow	CWE-682: Incorrect Calculation	PASSED
SW C-1 00	Function Default Visibility	CWE-710: Improper Adherence to Coding Standards	PASSED

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