CONTRACT WOLF

Blockchain Security - Smart Contract Audits

Security Assessment

April 26, 2022

Disclaimer

ContractWolf.io audits and reports should not be considered as a form of project's "advertisement" and does not cover any interaction and assessment from "project's contract" to "external contracts" such as Pancakeswap or similar.

ContractWolf does not provide any warranty on its released reports.

ContractWolf should not be used as a decision to invest into an audited project and is not affiliated nor partners to its audited contract projects.

ContractWolf provides transparent report to all its "clients" and to its "clients participants" and will not claim any guarantee of bug-free code within its **SMART CONTRACT**.

ContractWolf presence is to analyze, audit and assess the client's smart contract's code.

Each company or projects should be liable to its security flaws and functionalities.

Scope of Work

TALETE team agreed and provided us with the files that needs to be tested (Github, Bscscan, Etherscan, files, etc.). The scope of the audit is the main contract.

The goal of this engagement was to identify if there is a possibility of security flaws in the implementation of the contract or system.

ContractWolf will be focusing on contract issues and functionalities along with the projects claims from smart contract to their website, whitepaper and repository which has been provided by **TALETE.**

Network

Binance Smart Chain (BEP20)

Contract link

Text

Website

http://www.taletecode.com

Telegram

https://t.me/TALETECODE

Twitter

https://twitter.com/TaleteCode

Discord

https://discord.gg/xqe2zrqsJH

Description

TALETE code is transforming DeFi with the TALETE Autostaking Protocol (TAP) that delivers the industry's highest fixed APY, rebasing rewards every 10 minutes, and a simple buy-hold-earn system that grows your portfolio in your wallet, fast.

Logo

Risk Level Classification

Risk Level represents the classification or the probability that a certain function or threat that can exploit vulnerability and have an impact within the system or contract.

Risk Level is computed based on CVSS Version 3.0

Level	Value	Vulnerability
Critical	9 - 10	An Exposure that can affect the contract functions in several events that can risk and disrupt the contract
High	7 - 8.9	An Exposure that can affect the outcome when using the contract that can serve as an opening in manipulating the contract in an unwanted manner
Medium	4 - 6.9	An opening that could affect the outcome in executing the contract in a specific situation
Low	0.1 - 3.9	An opening but doesn't have an impact on the functionality of the contract
Informational	0	An opening that consists of information's but will not risk or affect the contract

Auditing Approach

Every line of code along with its functionalities will undergo manual review to check its security issues, quality, and contract scope of inheritance. The manual review will be done by our team that will document any issues that 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 ContractWolf to make sure we understand the size, scope, and functionality of the smart contract.
    - Manual review of code, our team will have a process of reading the code line-by-line with the intention of identifying potential vulnerabilities and security flaws.

2. Testing and automated analysis that includes:

    - Testing the smart contract functions with common test cases and scenarios, to ensure that it returns the expected results.

3. Best practices review, the team will review the contract with the aim to improve efficiency, effectiveness, clarifications, maintainability, security, and control within the smart contract.

4. Recommendations to help the project take steps to secure the smart contract.

Used Code from other Frameworks/Smart Contracts (Direct Imports)

Imported Packages

- Text

Description

Optimization enabled: Yes

Decimal: 7

Symbol: TALETE

Max / Total supply: 20,000,000,000

Capabilities

Components

Version	Contracts	Libraries	Interfaces	Abstract
1.0	2	1	4	1

Exposed Functions

Version	Public	Private	External	Internal
1.0	11	0	52	18

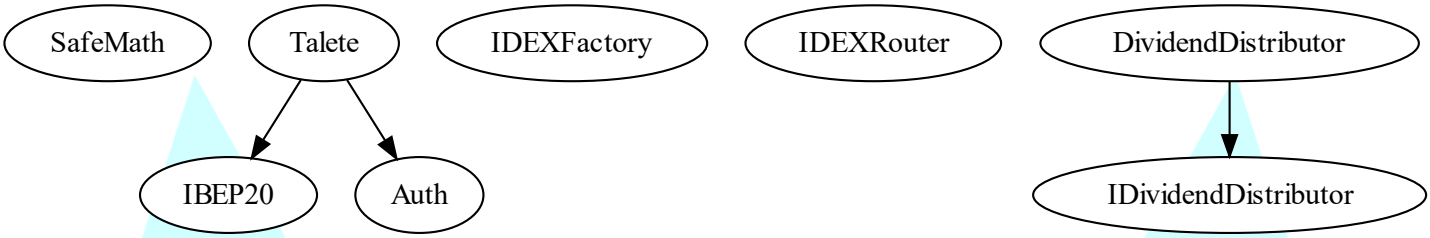
State Variables

Version	Total	Public
1.0	65	19

Capabilities

Version	Solidity Versions Observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts
1.0	v0.7.6		Yes	No	No

Inheritance Graph



Correct implementation of Token Standard

Tested	Verified
✓	✗

Overall Checkup (Smart Contract Security)

Tested	Verified
✓	✓

Function	Description	Exist	Tested	Verified
TotalSupply	Information about the total coin or token supply	✓	✓	✓
BalanceOf	Details on the account balance from a specified address	✓	✓	✓
Transfer	An action that transfers a specified amount of coin or token to a specified address	✓	✓	✓
TransferFrom	An action that transfers a specified amount of coin or token from a specified address	✓	✓	✓
Approve	Provides permission to withdraw specified number of coin or token from a specified address	✓	✓	✓

Verify Claims

Statement	Exist	Tested	Deployer
Renounce Ownership	–	–	–
Mint	–	–	–
Burn	–	–	–
Block	–	–	–
Pause	–	–	–

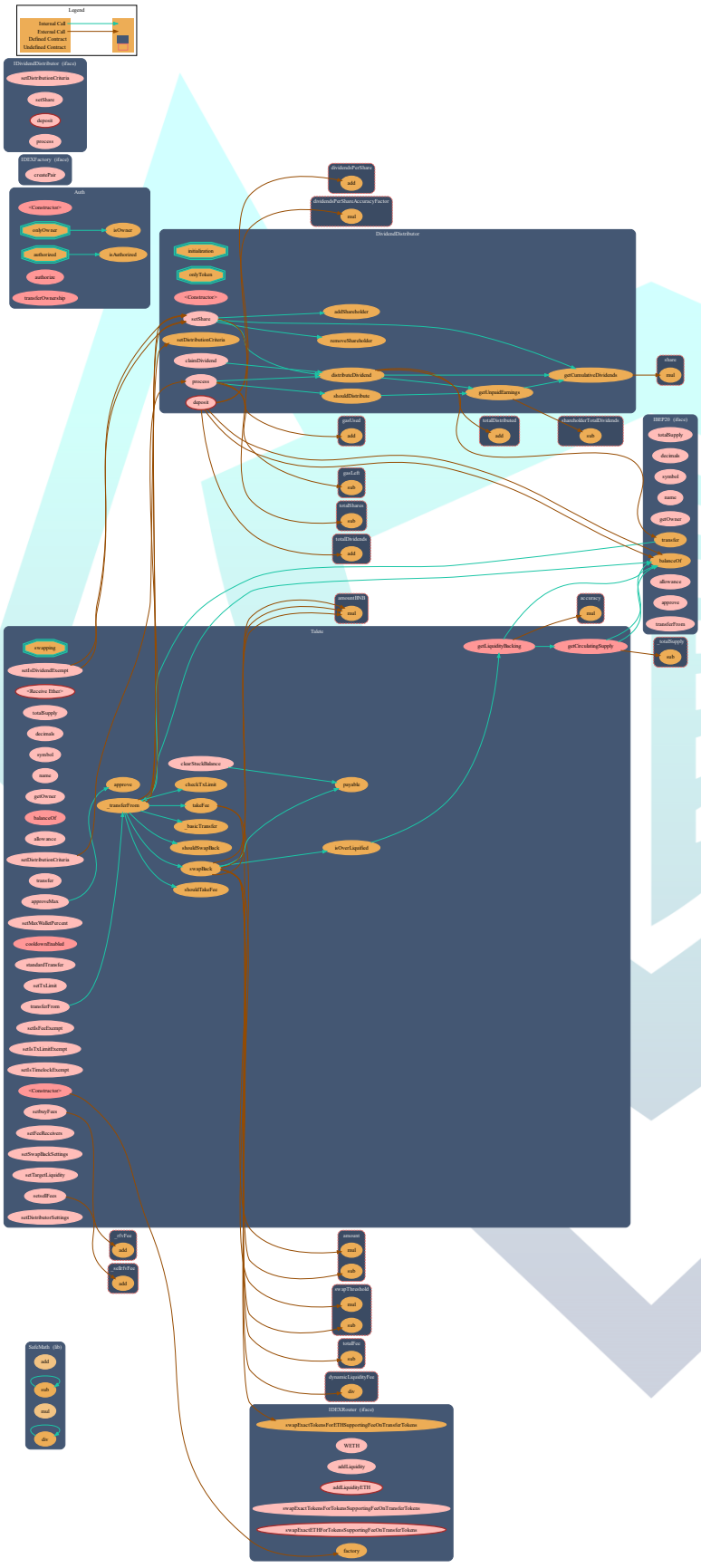
Legend

Attribute	Symbol
Verified / Can	✓
Verified / Cannot	✗
Unverified / Not checked	⚑
Not Available	–

Write Functions of Contract

1. approve
2. approveMax
3. authorize
4. clearStuckBalance
5. cooldownEnabled
6. setDistributionCriteria
7. setDistributorSettings
8. setFeeReceivers
9. setIsDividendExempt
10. setIsFeeExempt
11. setIsTimelockExempt
12. setIsTxLimitExempt
13. setMaxWalletPercent
14. setSwapBackSettings
15. setTargetLiquidity
16. setTxLimit
17. setbuyFees
18. setsellFees
19. standardTransfer
20. transfer
21. transferFrom
22. transferOwnership

Call Graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
IDividendDistributor (iface)
setDistributionCriteria
setShare
deposit
process
IDEXFactory (iface)
createPair
Auth
<Constructor>
onlyOwner
owner
authorized
isAuthorized
authorize
transferOwnership
dividendPerShare
add
dividendPerShareAccuracyFactor
mul
DividendDistributor
initialization
onlyToken
<Constructor>
setShare
addShareholder
removeShareholder
setDistributionCriteria
claimDividend
process
deposit
distributeDividend
shouldDistribute
getCumulativeDividends
getUnpaidEarnings
share
mul
totalDistributed
add
shareholderTotalDividends
sub
totalShares
totalDividends
IBEP20 (iface)
totalSupply
decimals
symbol
name
getOwner
transfer
balanceOf
allowance
approve
transferFrom
amountBNB
accuracy
Tokke
swapping
setIsDividendExempt
<Receive Ether>
totalSupply
decimals
symbol
name
getOwner
balanceOf
allowance
setDistributionCriteria
transfer
approveMax
setMaxWalletPercent
cooldownEnabled
standardTransfer
setTxLimit
transferFrom
setIsFeeExempt
setIsTxLimitExempt
setIsTimelockExempt
<Constructor>
setBuyFees
setFeeReceivers
setSwapBackSettings
setTargetLiquidity
setInitFees
setDistributorSettings
approve
transferFrom
clearStuckBalance
checkTxLimit
takeFee
_basicTransfer
shouldSwapBack
swapBack
shouldTakeFee
payable
setOverLiquified
getLiquidityBacking
getCirculatingSupply
totalSupply
sell
buyFee
add
sellFee
add
amount
mul
sub
swapThreshold
mul
sub
totalFee
sub
dynamicLiquidityFee
div
SafeMath (lib)
add
sub
mul
div
IDEXRouter (iface)
swapExactTokensForETHSupportingFeeOnTransferTokens
WETH
addLiquidity
addLiquidityETH
swapExactTokensForTokensSupportingFeeOnTransferTokens
swapExactETHForTokensSupportingFeeOnTransferTokens
factory

SWC Attacks

ID	Title	Status
SWC-136	Unencrypted Private Data On-Chain	PASSED
SWC-135	Code With No Effects	PASSED
SWC-134	Message call with hardcoded gas amount	PASSED
SWC-133	Hash Collisions with Multiple Variable Length Arguments	PASSED
SWC-132	Unexpected Ether balance	PASSED
SWC-131	Presence of unused variables	PASSED
SWC-130	Right-To Left Override control character (U+202E)	PASSED
SWC-129	Typographical Error	PASSED
SWC-128	DoS With Block Gas Limit	PASSED
SWC-127	Arbitrary Jump with Function Type Variable	PASSED
SWC-126	Insufficient Gas Griefing	PASSED
SWC-125	Incorrect Inheritance Order	PASSED
SWC-124	Write to Arbitrary Storage Location	PASSED
SWC-123	Requirement Violation	PASSED
SWC-122	Lack of Proper Signature Verification	PASSED
SWC-121	Missing Protection against Signature Replay Attacks	PASSED
SWC-120	Weak Sources of Randomness from Chain Attributes	PASSED
SWC-119	Shadowing State Variables	PASSED
SWC-118	Incorrect Constructor Name	PASSED
SWC-117	Signature Malleability	PASSED
SWC-116	Block values as a proxy for time	PASSED
SWC-115	Authorization through tx.origin	PASSED
SWC-114	Transaction Order Dependence	PASSED
SWC-113	DoS with Failed Call	PASSED
SWC-112	Delegate call to Untrusted Callee	PASSED
SWC-111	Use of Deprecated Solidity Functions	PASSED

SWC-110	Assert Violation	**PASSED**
SWC-109	Uninitialized Storage Pointer	**PASSED**
SWC-108	State Variable Default Visibility	**NOT PASSED**
SWC-107	Reentrancy	**PASSED**
SWC-106	Unprotected SELFDESTRUCT Instruction	**PASSED**
SWC-105	Unprotected Ether Withdrawal	**PASSED**
SWC-104	Unchecked Call Return Value	**PASSED**
SWC-103	Floating Pragma	**NOT PASSED**
SWC-102	Outdated Compiler Version	**PASSED**
SWC-101	Integer Overflow and Underflow	**PASSED**
SWC-100	Function Default Visibility	**PASSED**

AUDIT PASSED

Low Issues

A floating pragma is set (SWC-103)	L: 5
State variable visibility is not set (SWC-108)	L: 186 C: 12, L: 194 C: 11, L: 195 C: 12, L: 196 C: 12, L: 198 C: 14, L: 199 C: 33, L: 200 C: 33, L: 214 C: 12, L: 216 C: 12, L: 357 C: 12, L: 359 C: 12, L: 360 C: 12, L: 361 C: 12, L: 362 C: 12, L: 363 C: 12, L: 364 C: 12, L: 365 C: 12, L: 366 C: 12, L: 367 C: 12, L: 373 C: 12, L: 379 C: 33, L: 380 C: 54, L: 382 C: 30, L: 383 C: 30, L: 384 C: 30, L: 385 C: 30, L: 387 C: 12, L: 388 C: 12, L: 389 C: 12, L: 390 C: 12, L: 391 C: 12, L: 392 C: 12, L: 394 C: 12, L: 395 C: 12, L: 396 C: 12, L: 397 C: 12, L: 398 C: 12, L: 399 C: 12,

	L: 402 C: 12, L: 409 C: 12, L: 410 C: 12, L: 417 C: 24, L: 418 C: 12, L: 427 C: 9,

Audit Comments

- Deployer can transfer ownership
- Deployer can take BNB from contract
- Deployer can set cooldown status
- Deployer cannot burn
- Deployer cannot block user
- Deployer cannot pause contract
- Deployer cannot mint after initial deployment
- Authorized can transfer tokens
- Authorized can include/exclude addresses from dividend
- Authorized can include/exclude addresses from fees
- Authorized can include/exclude addresses from transaction limit
- Authorized can include/exclude addresses from time lock
- Authorized can set buy fees with an indefinite amount
- Authorized can set sell fees with an indefinite amount
- Authorized can set max transaction limit with an indefinite amount
- Authorized can set max wallet token
- Authorized can set fee receivers
- Authorized can set swap back settings
- Authorized can set target liquidity
- Authorized can set distribution criteria
- Authorized can set distributor settings
- authorize function has public modifier, anyone can set authorized

CONTRACTWOLF

Blockchain Security - Smart Contract Audits