



# CONTRACT WOLF

**Blockchain Security - Smart Contract Audits**

## Security Assessment

May 3, 2022



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# 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

**Metal Shiba Inu** 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 **Metal Shiba Inu**.

# Network

Binance Smart Chain (BEP20)

## Contract link

<https://bscscan.com/address/0x5C6abA7B5cC0c1978Caa3aA085F04f2452247A7B>

## Website

<https://metalshiba.com/>

## Telegram

<https://t.me/MetalShibaInu>

## Twitter

<https://twitter.com/METALSHIBAINU>

## Instagram

<https://www.instagram.com/metalshibainu/>

## Discord

<https://discord.gg/TtsvPHH2Mt>

## Gitbook

<https://metalshiba-inu.gitbook.io/whitepaper/>

## Description

**Metal Shiba Inu** is the ultimate superhero inspired by the Shiba meme. The idea is to then create a paper version and promote it at the most famous comic book international fairs (such as Lucca Comics). This will benefit not only the comic itself but also the token and community built around it.

## 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

- IBEP20
- Ownable
- TimeLock
- PCSFactory
- PCSv2Router
- PCSv2Pair
- MetalShiba



# Description

Optimization enabled: Yes

Decimal: 18

Symbol: METAL

Max / Total supply: 210,000,000,000

## Capabilities

### Components

Version	Contracts	Libraries	Interfaces	Abstract
1.0	1	0	4	2

### Exposed Functions

Version	Public	Private	External	Internal
1.0	15	0	70	10

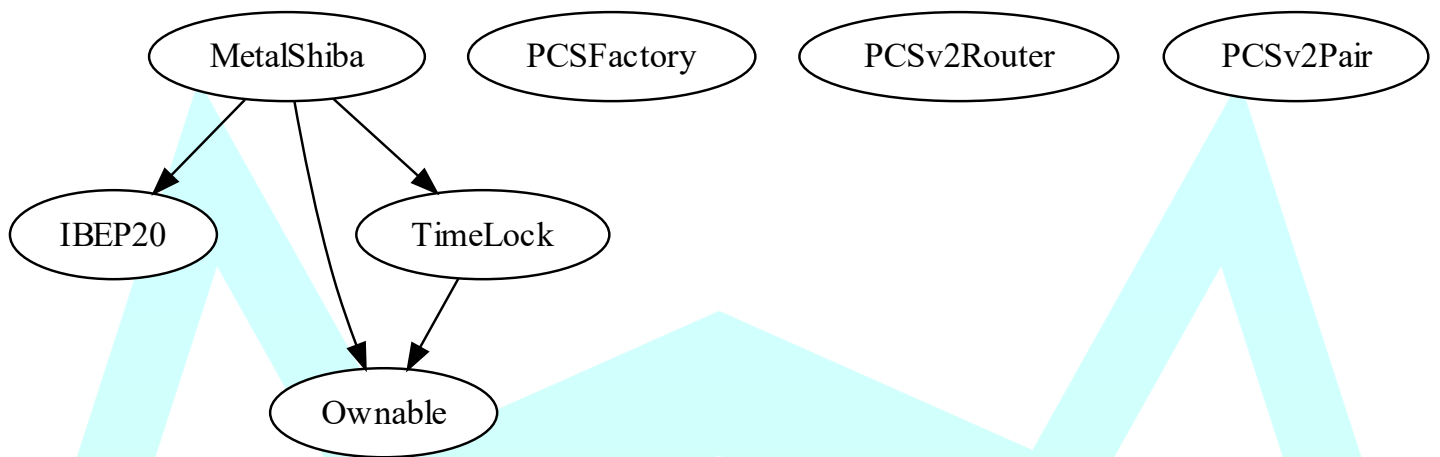
### State Variables

Version	Total	Public
1.0	75	47

### Capabilities

Version	Solidity Versions Observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts
1.0	v0.8.13		Yes	Yes	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	—	—	—

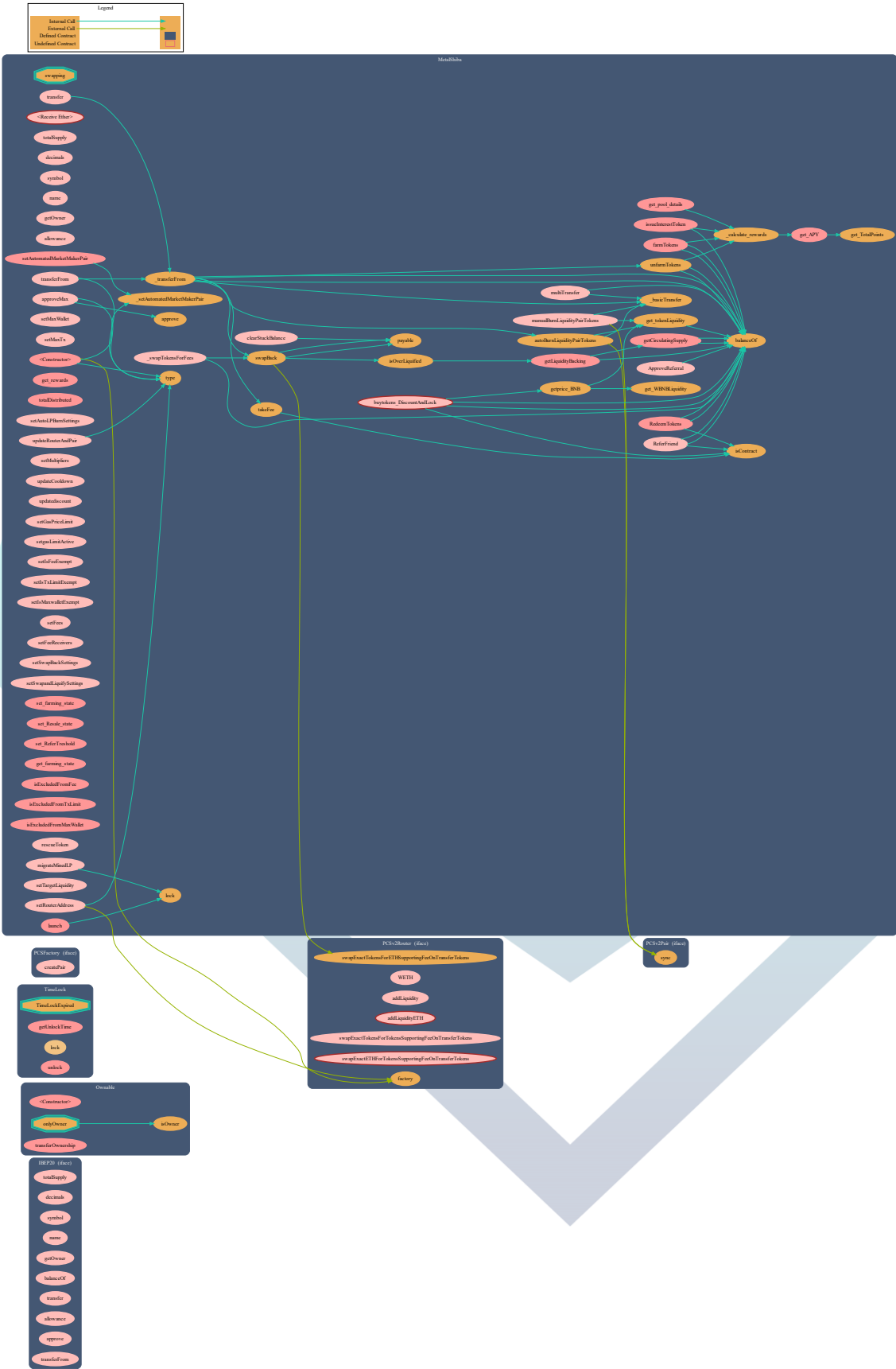
## Legend

Attribute	Symbol
Verified / Can	✓
Verified / Cannot	✗
Unverified / Not checked	🚩
Not Available	—

# Write Functions of Contract

1. ApproveReferral	22. setIsMaxwalletExempt
2. RedeemTokens	23. setIsTxLimitExempt
3. ReferFriend	24. setMaxTx
4. _swapTokensForFees	25. setMaxWallet
5. approve	26. setMultipliers
6. approveMax	27. setRouterAddress
7. buytokens_DiscountAndLock	28. setSwapBackSettings
8. clearStuckBalance	29. setSwapandLiquifySettings
9. farmTokens	30. setTargetLiquidity
10. issueInterestToken	31. set_ReferTreshold
11. launch	32. set_Resale_state
12. manualBurnLiquidityPairTokens	33. set_farming_state
13. migrateMinedLP	34. setgasLimitActive
14. multiTransfer	35. transfer
15. rescueToken	36. transferFrom
16. setAutoLPBurnSettings	37. transferOwnership
17. setAutomatedMarketMakerPair	38. unlock
18. setFeeReceivers	39. updateCooldown
19. setFees	40. updateRouterAndPair
20. setGasPriceLimit	41. updatediscount

# Call Graph



# SWC Attacks

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

<a href="#"><u>SWC-110</u></a>	Assert Violation	<b>PASSED</b>
<a href="#"><u>SWC-109</u></a>	Uninitialized Storage Pointer	<b>PASSED</b>
<a href="#"><u>SWC-108</u></a>	State Variable Default Visibility	<b>PASSED</b>
<a href="#"><u>SWC-107</u></a>	Reentrancy	<b>PASSED</b>
<a href="#"><u>SWC-106</u></a>	Unprotected SELFDESTRUCT Instruction	<b>PASSED</b>
<a href="#"><u>SWC-105</u></a>	Unprotected Ether Withdrawal	<b>PASSED</b>
<a href="#"><u>SWC-104</u></a>	Unchecked Call Return Value	<b>PASSED</b>
<a href="#"><u>SWC-103</u></a>	Floating Pragma	<b>PASSED</b>
<a href="#"><u>SWC-102</u></a>	Outdated Compiler Version	<b>PASSED</b>
<a href="#"><u>SWC-101</u></a>	Integer Overflow and Underflow	<b>PASSED</b>
<a href="#"><u>SWC-100</u></a>	Function Default Visibility	<b>PASSED</b>



# AUDIT PASSED

## Low Issues

Potential use of “block.number” as source of randomness (SWC-120)

L: 368 C: 46, L: 440 C: 36,  
L: 444 C: 33, L: 593 C: 2

# Audit Comments

- Deployer can transfer ownership
- Deployer can set max wallet with an indefinite amount
- Deployer can set max transaction limit with an indefinite amount
- Deployer can set/toggle automated market maker pair
- Deployer can set sell multiplier not greater than 300
- Deployer can set auto burn LP settings
- Deployer can set sell/buy/transfer multipliers not greater than 30
- Deployer can set gas price limit with an amount not less than 20
- Deployer can set fees not greater than 10%
- Deployer can set fee receivers
- Deployer can set swap back settings
- Deployer can set swap and liquify settings
- Deployer can set refer threshold
- Deployer can set migrate mined LP address
- Deployer can set target liquidity
- Deployer can set router address
- Deployer can update cooldown time
- Deployer can update discount not greater than 50%
- Deployer can update router and pair
- Deployer can toggle gas limit
- Deployer can toggle farming status
- Deployer can toggle resale status
- Deployer can include/exclude addresses from fees
- Deployer can include/exclude addresses from transaction limit
- Deployer can include/exclude addresses from max wallet limit
- Deployer can launch

- Deployer can unlock function after 180 days
- Deployer can airdrop to multiple addresses
- Deployer can collect BNB/tokens from contract
- Deployer can swap token for fees
- Deployer can manually burn liquidity pair tokens with an amount not greater than 10%
- Deployer cannot burn
- Deployer cannot block user
- Deployer cannot pause contract
- Deployer cannot mint after initial deployment



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