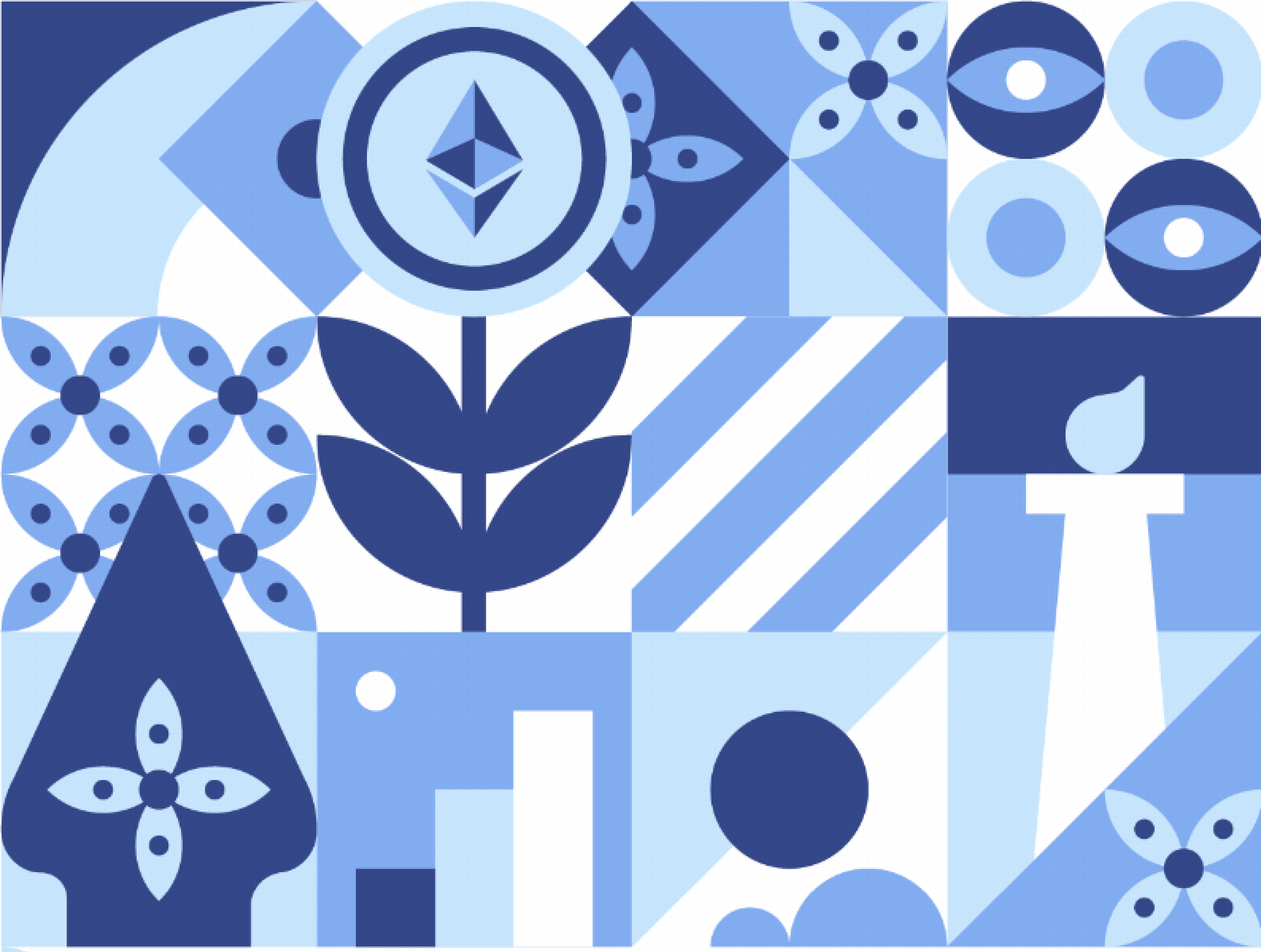

Tamadoge

Smart Contract Audit Report

SYSFIXED

27 Jul 2022

TABLE OF CONTENTS

AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
Tamadoge	TAMA	Ethereum

Addresses

Contract address	0x12b6893cE26Ea6341919FE289212ef77e51688c8
Contract deployer address	0xbf73ED48596565F1AbDbeb28fdf6a330930fe331

Project Website

https://tamadoge.io/

Codebase

https://etherscan.io/address/0x12b6893cE26Ea6341919FE289212ef77e51688c8#code

SUMMARY

Tamadoge is the newest entry into the Doge ecosystem, and it’s coming on the scene with a woof! Unlike the predecessors, Tamadoge is coming out the gate barking, pushing the boundaries of the play-to-earn space in order to provide a game that people will be climbing over each other to use.

Contract Summary

Documentation Quality

Tamadoge provides a very good documentation with standard of solidity base code.

- The technical description is provided clearly and structured and also dont have any high risk issue.

Code Quality

The Overall quality of the basecode is standard.

- Standard solidity basecode and rules are already followed by Tamadoge with the discovery of several low issues.

Test Coverage

Test coverage of the project is 100% (Through Codebase)

Audit Findings Summary

- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 251, 251, 252, 252, 253, 279, 288, 295, 308, 308, 309, 310, 310, 311, 311, 311, 312, 314, 387, 398, 413, 433, 435, 443, 444, 454 and 456.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 10, 95, 125 and 152.

CONCLUSION

We have audited the Tamadoge project released on July 2022 to discover issues and identify potential security vulnerabilities in Tamadoge Project. This process is used to find technical issues and security loopholes which might be found in the smart contract.

The security audit report provides a satisfactory result with some low-risk issues.

The issues found in the Tamadoge smart contract code do not pose a considerable risk. The writing of the contract is close to the standard of writing contracts in general. The low-risk issues found are some arithmetic operation issues and floating pragmas set on several lines. Specifying a fixed compiler version is recommended to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

AUDIT RESULT

Article	Category	Description	Result
Default Visibility	SWC-100 SWC-108	Functions and state variables visibility should be set explicitly. Visibility levels should be specified consciously.	PASS
Integer Overflow and Underflow	SWC-101	If unchecked math is used, all math operations should be safe from overflows and underflows.	ISSUE FOUND
Outdated Compiler Version	SWC-102	It is recommended to use a recent version of the Solidity compiler.	PASS
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	ISSUE FOUND
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	PASS
Unprotected Ether Withdrawal	SWC-105	Due to missing or insufficient access controls, malicious parties can withdraw from the contract.	PASS
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	PASS
Reentrancy	SWC-107	Check effect interaction pattern should be followed if the code performs recursive call.	PASS
Uninitialized Storage Pointer	SWC-109	Uninitialized local storage variables can point to unexpected storage locations in the contract.	PASS
Assert Violation	SWC-110 SWC-123	Properly functioning code should never reach a failing assert statement.	PASS
Deprecated Solidity Functions	SWC-111	Deprecated built-in functions should never be used.	PASS
Delegate call to Untrusted Callee	SWC-112	Delegatecalls should only be allowed to trusted addresses.	PASS

DoS (Denial of Service)	SWC-113 SWC-128	Execution of the code should never be blocked by a specific contract state unless required.	PASS
Race Conditions	SWC-114	Race Conditions and Transactions Order Dependency should not be possible.	PASS
Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	PASS
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.	PASS
Signature Unique ID	SWC-117 SWC-121 SWC-122	Signed messages should always have a unique id. A transaction hash should not be used as a unique id.	PASS
Incorrect Constructor Name	SWC-118	Constructors are special functions that are called only once during the contract creation.	PASS
Shadowing State Variable	SWC-119	State variables should not be shadowed.	PASS
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	PASS
Write to Arbitrary Storage Location	SWC-124	The contract is responsible for ensuring that only authorized user or contract accounts may write to sensitive storage locations.	PASS
Incorrect Inheritance Order	SWC-125	When inheriting multiple contracts, especially if they have identical functions, a developer should carefully specify inheritance in the correct order. The rule of thumb is to inherit contracts from more /general/ to more /specific/.	PASS
Insufficient Gas Griefing	SWC-126	Insufficient gas griefing attacks can be performed on contracts which accept data and use it in a sub-call on another contract.	PASS
Arbitrary Jump Function	SWC-127	As Solidity doesnt support pointer arithmetics, it is impossible to change such variable to an arbitrary value.	PASS

Typographical Error	SWC-129	A typographical error can occur for example when the intent of a defined operation is to sum a number to a variable.	PASS
Override control character	SWC-130	Malicious actors can use the Right-To-Left-Override unicode character to force RTL text rendering and confuse users as to the real intent of a contract.	PASS
Unused variables	SWC-131 SWC-135	Unused variables are allowed in Solidity and they do not pose a direct security issue.	PASS
Unexpected Ether balance	SWC-132	Contracts can behave erroneously when they strictly assume a specific Ether balance.	PASS
Hash Collisions Variable	SWC-133	Using abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.	PASS
Hardcoded gas amount	SWC-134	The transfer() and send() functions forward a fixed amount of 2300 gas.	PASS
Unencrypted Private Data	SWC-136	It is a common misconception that private type variables cannot be read.	PASS

SMART CONTRACT ANALYSIS

Started	Tuesday Jul 26 2022 08:35:16 GMT+0000 (Coordinated Universal Time)
Finished	Wednesday Jul 27 2022 02:02:10 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	Token.sol

Detected Issues

ID	Title	Severity	Status
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "**" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "**" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "**" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged

SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "**" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
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SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
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SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
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SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 251

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
250   uint8 private constant _decimals = 18;
251   uint256 public constant hardCap = 2_000_000_000 * (10**_decimals); //2 billion
252   uint256 public constant mintHardCap = 1_400_000_000 * (10**_decimals); //1.4
billion
253   uint256 public constant lockedSupply = hardCap - mintHardCap; //600 million
254   uint256 public mintable = mintHardCap;
255
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 251

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
250   uint8 private constant _decimals = 18;
251   uint256 public constant hardCap = 2_000_000_000 * (10**_decimals); //2 billion
252   uint256 public constant mintHardCap = 1_400_000_000 * (10**_decimals); //1.4
billion
253   uint256 public constant lockedSupply = hardCap - mintHardCap; //600 million
254   uint256 public mintable = mintHardCap;
255
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 252

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
251   uint256 public constant hardCap = 2_000_000_000 * (10**_decimals); //2 billion
252   uint256 public constant mintHardCap = 1_400_000_000 * (10**_decimals); //1.4
billion
253   uint256 public constant lockedSupply = hardCap - mintHardCap; //600 million
254   uint256 public mintable = mintHardCap;
255   uint256 public locking_start;
256
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 252

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
251   uint256 public constant hardCap = 2_000_000_000 * (10**_decimals); //2 billion
252   uint256 public constant mintHardCap = 1_400_000_000 * (10**_decimals); //1.4
billion
253   uint256 public constant lockedSupply = hardCap - mintHardCap; //600 million
254   uint256 public mintable = mintHardCap;
255   uint256 public locking_start;
256
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 253

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
252   uint256 public constant mintHardCap = 1_400_000_000 * (10**_decimals); //1.4
billion
253   uint256 public constant lockedSupply = hardCap - mintHardCap; //600 million
254   uint256 public mintable = mintHardCap;
255   uint256 public locking_start;
256   uint256 public locking_end;
257
```

SWC-101 | ARITHMETIC OPERATION "-=" DISCOVERED

LINE 279

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
278   _symbol = symbol_;
279   mintable -= _mintAmount;
280   _mint(owner(), _mintAmount);
281   locking_start = lockingStartTime;
282   locking_end = lockingEndTime;
283
```

SWC-101 | ARITHMETIC OPERATION "-=" DISCOVERED

LINE 288

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
287   require(amount > 0 && amount <= mintable, "Amount out of bounds");
288   mintable -= amount;
289   _mint(owner(), amount);
290   }
291
292
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 295

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
if (amount > 0) {
mintedLockedSupply += amount;
_mint(owner(), amount);
} else {
revert("Nothing to mint");

```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 308

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
307   ) {
308   uint256 timePassed = (block.timestamp - locking_start) *
309   (10**_decimals);
310   uint256 totalLock = (lockedSupply * timePassed) /
311   ((locking_end - locking_start) * (10**_decimals));
312
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 308

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
307   ) {
308   uint256 timePassed = (block.timestamp - locking_start) *
309   (10**_decimals);
310   uint256 totalLock = (lockedSupply * timePassed) /
311   ((locking_end - locking_start) * (10**_decimals));
312
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 309

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
308   uint256 timePassed = (block.timestamp - locking_start) *
309   (10**_decimals);
310   uint256 totalLock = (lockedSupply * timePassed) /
311   ((locking_end - locking_start) * (10**_decimals));
312   finalAmount = (totalLock - mintedLockedSupply);
313
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 310

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
309   (10**_decimals);
310   uint256 totalLock = (lockedSupply * timePassed) /
311   ((locking_end - locking_start) * (10**_decimals));
312   finalAmount = (totalLock - mintedLockedSupply);
313   } else {
314
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 310

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
309   (10**_decimals);
310   uint256 totalLock = (lockedSupply * timePassed) /
311   ((locking_end - locking_start) * (10**_decimals));
312   finalAmount = (totalLock - mintedLockedSupply);
313   } else {
314
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 311

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
310   uint256 totalLock = (lockedSupply * timePassed) /
311   ((locking_end - locking_start) * (10**_decimals));
312   finalAmount = (totalLock - mintedLockedSupply);
313   } else {
314   finalAmount = lockedSupply - mintedLockedSupply;
315
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 311

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
310   uint256 totalLock = (lockedSupply * timePassed) /
311   ((locking_end - locking_start) * (10**_decimals));
312   finalAmount = (totalLock - mintedLockedSupply);
313   } else {
314   finalAmount = lockedSupply - mintedLockedSupply;
315
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 311

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
uint256 totalLock = (lockedSupply * timePassed) /
((locking_end - locking_start) * (10**_decimals));
finalAmount = (totalLock - mintedLockedSupply);
} else {
finalAmount = lockedSupply - mintedLockedSupply;

```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 312

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
311   ((locking_end - locking_start) * (10**_decimals));
312   finalAmount = (totalLock - mintedLockedSupply);
313   } else {
314   finalAmount = lockedSupply - mintedLockedSupply;
315   }
316
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 314

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
313   } else {
314   finalAmount = lockedSupply - mintedLockedSupply;
315   }
316   }
317
318
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 387

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
unchecked {
_approve(sender, _msgSender(), currentAllowance - amount);
}

return true;

```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 398

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
397   {
398   _approve(_msgSender(), to, _allowances[_msgSender()][to] + addedValue);
399   return true;
400   }
401
402
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 413

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
412   unchecked {
413   _approve(_msgSender(), to, currentAllowance - subtractedValue);
414   }
415
416   return true;
417
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 433

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
432   unchecked {
433   _balances[sender] = senderBalance - amount;
434   }
435   _balances[recipient] += amount;
436
437
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 435

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
434   }
435   _balances[recipient] += amount;
436
437   emit Transfer(sender, recipient, amount);
438   }
439
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 443

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
442
443   _totalSupply += amount;
444   _balances[account] += amount;
445   emit Transfer(address(0), account, amount);
446   }
447
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 444

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
443   _totalSupply += amount;
444   _balances[account] += amount;
445   emit Transfer(address(0), account, amount);
446   }
447
448
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 454

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
unchecked {
_balances[account] = accountBalance - amount;
}
_totalSupply -= amount;
```

SWC-101 | ARITHMETIC OPERATION "-=" DISCOVERED

LINE 456

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- Token.sol

Locations

```
455   }
456   _totalSupply -= amount;
457
458   emit Transfer(account, address(0), amount);
459   }
460
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 10

low SEVERITY

The current pragma Solidity directive is ""^0.8.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- Token.sol

Locations

```
9
10   pragma solidity ^0.8.0;
11
12   /**
13   * @dev Interface of the ERC20 standard as defined in the EIP.
14
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 95

low SEVERITY

The current pragma Solidity directive is ""^0.8.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- Token.sol

Locations

```
94
95    pragma solidity ^0.8.0;
96
97
98    /**
99
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 125

low SEVERITY

The current pragma Solidity directive is ""^0.8.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- Token.sol

Locations

```
124
125   pragma solidity ^0.8.0;
126
127   /**
128   * @dev Provides information about the current execution context, including the
129
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 152

low SEVERITY

The current pragma Solidity directive is ""^0.8.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- Token.sol

Locations

```
151
152   pragma solidity ^0.8.0;
153
154
155   /**
156
```

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This is a limited report on our findings based on our analysis, in accordance with good industry practice as of the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn’t say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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