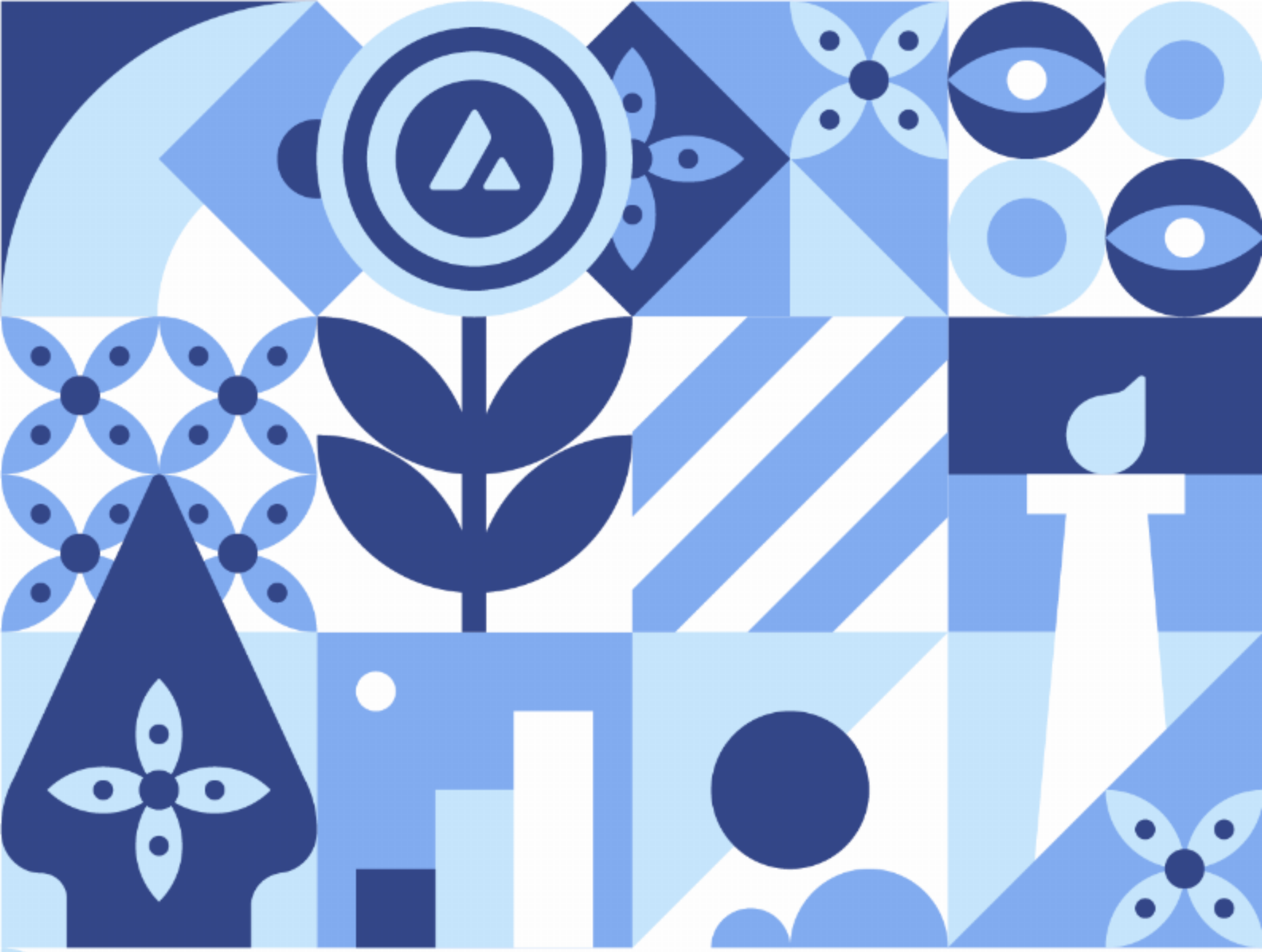

Defrost Finance Token

Smart Contract Audit Report

SYSFIXED

16 Nov 2021

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
Defrost Finance Token	MELT	Avalanche

Addresses

Contract address	0x47eb6f7525c1aa999fbc9ee92715f5231eb1241d
Contract deployer address	0x550607084493DA6101Bc3270c76c7b17054e38ff

Project Website

https://www.defrost.finance/home

Codebase

https://snowtrace.io/address/0x47eb6f7525c1aa999fbc9ee92715f5231eb1241d#code

SUMMARY

Defrost Finance is a decentralized protocol that allows you to leverage yield-bearing Tokens or other pool tokens from Avalanche and cross-chain protocols as collaterals for generating H2O, a USD-pegged stablecoin. Defrost Finance helps users improve capital efficiency from assets locked in pools or vaults. It supports users to provide liquidity to gain additional yields from features such as farming, borrowing, staking, swap, and bridge support for convenience when trading.

Contract Summary

Documentation Quality

Defrost Finance Token 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 Defrost Finance Token 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 59, 91, 113, 114, 150 and 186.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 7, 33, 192 and 382.

CONCLUSION

We have audited the Defrost Finance Token project released in January 2023 to discover issues and identify potential security vulnerabilities in Defrost Finance Token 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 satisfactory results with low-risk issues.

The issues found in the Defrost Finance Token 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 are some arithmetic operation issues, and a floating pragma is set. 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	Monday Nov 15 2021 15:48:17 GMT+0000 (Coordinated Universal Time)
Finished	Tuesday Nov 16 2021 04:46:07 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	DefrostToken.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-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 59

low SEVERITY

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

Source File

- DefrostToken.sol

Locations

```
58   function add(uint256 a, uint256 b) internal pure returns (uint256) {
59   uint256 c = a + b;
60   require(c >= a, "SafeMath: addition overflow");
61
62   return c;
63
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 91

low SEVERITY

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

Source File

- DefrostToken.sol

Locations

```
90   require(b <= a, errorMessage);
91   uint256 c = a - b;
92
93   return c;
94   }
95
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 113

low SEVERITY

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

Source File

- DefrostToken.sol

Locations

```
112
113   uint256 c = a * b;
114   require(c / a == b, "SafeMath: multiplication overflow");
115
116   return c;
117
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 114

low SEVERITY

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

Source File

- DefrostToken.sol

Locations

```
113   uint256 c = a * b;
114   require(c / a == b, "SafeMath: multiplication overflow");
115
116   return c;
117   }
118
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 150

low SEVERITY

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

Source File

- DefrostToken.sol

Locations

```
149   require(b > 0, errorMessage);
150   uint256 c = a / b;
151   // assert(a == b * c + a % b); // There is no case in which this doesn't hold
152
153   return c;
154
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 186

low SEVERITY

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

Source File

- DefrostToken.sol

Locations

```
185   require(b != 0, errorMessage);
186   return a % b;
187   }
188   }
189
190
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 7

low SEVERITY

The current pragma Solidity directive is ""^0.5.16"". 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

- DefrostToken.sol

Locations

```
6
7   pragma solidity ^0.5.16;
8
9   /**
10   * @title ERC20 interface
11
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 33

low SEVERITY

The current pragma Solidity directive is ""^0.5.0"". 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

- DefrostToken.sol

Locations

```
32
33  pragma solidity ^0.5.0;
34
35  /**
36  * @dev Wrappers over Solidity's arithmetic operations with added overflow
37
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 192

low SEVERITY

The current pragma Solidity directive is ""^0.5.16"". 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

- DefrostToken.sol

Locations

```
191
192   pragma solidity ^0.5.16;
193
194
195
196
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 382

low SEVERITY

The current pragma Solidity directive is ""^0.5.16"". 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

- DefrostToken.sol

Locations

```
381
382   pragma solidity ^0.5.16;
383
384
385   contract DefrostToken is StandardToken20{
386
```

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