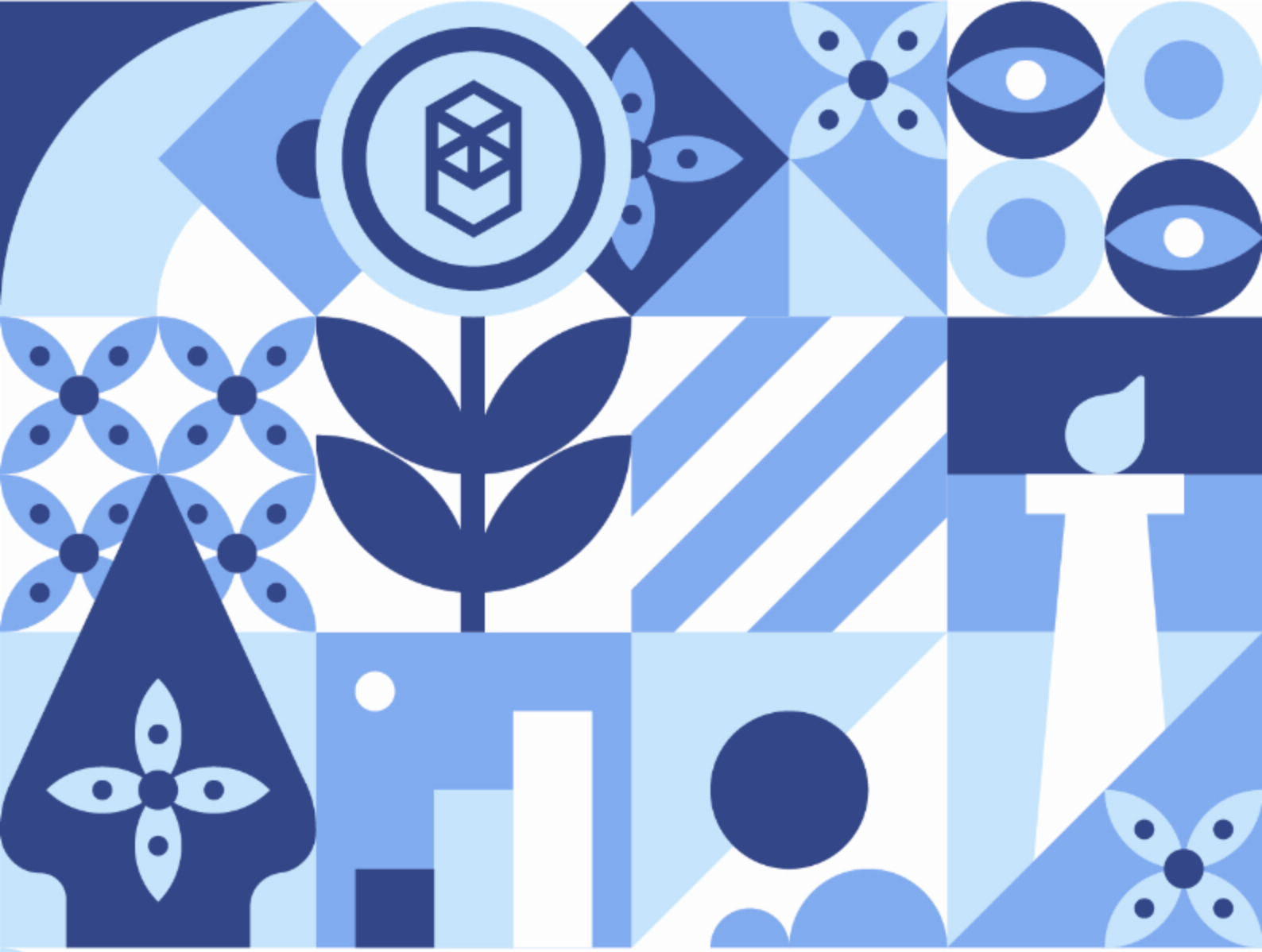

MiniVerse Share

Smart Contract Audit Report

SYSFIXED

26 Feb 2022

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
MiniVerse Share	MSHARE	Fantom

Addresses

Contract address	0xb011ec534d9175cd7a69afbfc1bcc9990862c462
Contract deployer address	0xa608B11D3671D3Dc7BD45bfCd220fdcaA0D23351

Project Website

https://app.mvfinance.club/#/

Codebase

https://ftmscan.com/address/0xb011ec534d9175cd7a69afbfc1bcc9990862c462#code

SUMMARY

"MiniVerse Finance is an algorithmic stablecoin protocol pegged 1:1 to USDC on Fantom. Inspired by previous algorithmic stable protocols such as Basis Cash and Tomb Finance. Much like Tomb, our protocol uses three tokens (MvDOLLAR, MSHARE, MvBOND) to incentivize a stable 1:1 peg to USDC. The protocol's underlying mechanism dynamically adjusts MvDOLLAR's supply, pushing its price up or down relative to the price of USDC. This should be $1 however there may be times when USDC loses its peg and if our protocol is functioning as intended will follow USDC to keep pegged 1:1 to i"

Contract Summary

Documentation Quality

MiniVerse Share 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 MiniVerse Share 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 31, 43, 56, 57, 68, 78, 92, 109, 124, 125, 143, 160, 178, 198, 218 and 829.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 9, 225, 251, 330, 636, 678 and 685.

CONCLUSION

We have audited the MiniVerse Share project released in February 2022 to discover issues and identify potential security vulnerabilities in MiniVerse Share 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 MiniVerse Share 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, a floating pragma is set, and 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.

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	Friday Feb 25 2022 02:08:19 GMT+0000 (Coordinated Universal Time)
Finished	Saturday Feb 26 2022 19:03:03 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	MvSHARE.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-103	A FLOATING PRAGMA IS SET.	low	acknowledged
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SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 31

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
30   function tryAdd(uint256 a, uint256 b) internal pure returns (bool, uint256) {
31   uint256 c = a + b;
32   if (c < a) return (false, 0);
33   return (true, c);
34   }
35
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 43

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
42   if (b > a) return (false, 0);
43   return (true, a - b);
44   }
45
46   /**
47
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 56

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
55   if (a == 0) return (true, 0);
56   uint256 c = a * b;
57   if (c / a != b) return (false, 0);
58   return (true, c);
59   }
60
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 57

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
56   uint256 c = a * b;
57   if (c / a != b) return (false, 0);
58   return (true, c);
59   }
60
61
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 68

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
67   if (b == 0) return (false, 0);
68   return (true, a / b);
69   }
70
71   /**
72
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 78

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
77   if (b == 0) return (false, 0);
78   return (true, a % b);
79   }
80
81   /**
82
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 92

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
91   function add(uint256 a, uint256 b) internal pure returns (uint256) {
92   uint256 c = a + b;
93   require(c >= a, "SafeMath: addition overflow");
94   return c;
95   }
96
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 109

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
108   require(b <= a, "SafeMath: subtraction overflow");
109   return a - b;
110   }
111
112   /**
113
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 124

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
123   if (a == 0) return 0;
124   uint256 c = a * b;
125   require(c / a == b, "SafeMath: multiplication overflow");
126   return c;
127   }
128
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 125

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
124   uint256 c = a * b;
125   require(c / a == b, "SafeMath: multiplication overflow");
126   return c;
127   }
128
129
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 143

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
142   require(b > 0, "SafeMath: division by zero");
143   return a / b;
144   }
145
146   /**
147
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 160

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
159   require(b > 0, "SafeMath: modulo by zero");
160   return a % b;
161   }
162
163   /**
164
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 178

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
177   require(b <= a, errorMessage);
178   return a - b;
179   }
180
181   /**
182
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 198

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
197   require(b > 0, errorMessage);
198   return a / b;
199   }
200
201   /**
202
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 218

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
217   require(b > 0, errorMessage);
218   return a % b;
219   }
220   }
221
222
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 829

low SEVERITY

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

Source File

- MvSHARE.sol

Locations

```
828   startTime = _startTime;
829   endTime = startTime + VESTING_DURATION;
830
831   communityFundLastClaimed = startTime;
832   devFundLastClaimed = startTime;
833
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 9

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<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

- MvSHARE.sol

Locations

```
8
9   pragma solidity >=0.6.0 <0.8.0;
10
11   /**
12   * @dev Wrappers over Solidity's arithmetic operations with added overflow
13
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 225

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<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

- MvSHARE.sol

Locations

```
224
225   pragma solidity >=0.6.0 <0.8.0;
226
227   /*
228   * @dev Provides information about the current execution context, including the
229
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 251

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<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

- MvSHARE.sol

Locations

```
250
251   pragma solidity >=0.6.0 <0.8.0;
252
253   /**
254   * @dev Interface of the ERC20 standard as defined in the EIP.
255
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 330

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<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

- MvSHARE.sol

Locations

```
329
330   pragma solidity >=0.6.0 <0.8.0;
331
332
333   /**
334
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 636

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<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

- MvSHARE.sol

Locations

```
635
636   pragma solidity >=0.6.0 <0.8.0;
637
638
639   /**
640
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 678

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<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

- MvSHARE.sol

Locations

```
677
678   pragma solidity >=0.6.0 <0.8.0;
679
680
681   // File @openzeppelin/contracts/access/Ownable.sol@v3.4.2
682
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 685

low SEVERITY

The current pragma Solidity directive is ""=0.6.0<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

- MvSHARE.sol

Locations

```
684
685   pragma solidity >=0.6.0 <0.8.0;
686
687   /**
688   * @dev Contract module which provides a basic access control mechanism, where
689
```

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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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