Meta-DeFi

Smart Contract Audit Report

SYSFIXED

09 Jan 2023

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
Meta-DeFi	METAd	Binance Smart Chain

Addresses

Contract address	0x30fC31892889f744fFf20153b2bE8E7A0eb338cA
Contract deployer address	0x86EcC6043Fa093C387959dF25A2bBbcE7D4C9Abf

Project Website

https://meta-defi.app/

Codebase

https://bscscan.com/address/0x30fC31892889f744fFf20153b2bE8E7A0eb338cA#code

SUMMARY

MetaDeFi is a project that will bring together all of the tools needed in the financial and DeFi spheres under one umbrella like Bridge, Swap, Staking, Farming, and Auto Trading. Our advantages CMC prelist app, Bridge Live, Cross Live, Swap Live, AutoLive, Lending Live, axes CAN'T be greater than 3%, KYC+Audit, CN Massive Marketing, 10+ AMAs, Binance Live AMA, 0 Unlocked Tokens.

Contract Summary

Documentation Quality

Meta-DeFi 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 Meta-DeFi 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 132, 142, 150, 169, 171, 183, 184, 198, 200, 466, 466, 466, 467, 525, 567, 567, 569, 569, 573 and 596.
- SWC-110 SWC-123 | It is recommended to use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM on lines 586 and 587.

CONCLUSION

We have audited the Meta-DeFi project released on January 2023 to discover issues and identify potential security vulnerabilities in Meta-DeFi 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 Meta-DeFi 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 out of bounds array access which the index access expression can cause an exception in case of the use of an invalid array index value.

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.	PASS
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.	ISSUE FOUND
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	Sunday Jan 08 2023 12:15:18 GMT+0000 (Coordinated Universal Time)
Finished	Monday Jan 09 2023 01:16:19 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	MetaDeFi.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
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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-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 132

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
131   unchecked {
132   _approve(sender, _msgSender(), currentAllowance - amount);
133   }
134   }
135
136
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 142

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
141   function increaseAllowance(address spender, uint256 addedValue) public virtual
returns (bool) {
142   _approve(_msgSender(), spender, _allowances[_msgSender()][spender] + addedValue);
143   return true;
144   }
145
146
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 150

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
149   unchecked {
150   _approve(_msgSender(), spender, currentAllowance - subtractedValue);
151   }
152
153   return true;
154
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 169

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
168   unchecked {
169   _balances[sender] = senderBalance - amount;
170   }
171   _balances[recipient] += amount;
172
173
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 171

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
170   }
171   _balances[recipient] += amount;
172
173   emit Transfer(sender, recipient, amount);
174
175
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 183

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
182
183   _totalSupply += amount;
184   _balances[account] += amount;
185   emit Transfer(address(0), account, amount);
186
187
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 184

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
183   _totalSupply += amount;
184   _balances[account] += amount;
185   emit Transfer(address(0), account, amount);
186
187   _afterTokenTransfer(address(0), account, amount);
188
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 198

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
197   unchecked {
198   _balances[account] = accountBalance - amount;
199   }
200   _totalSupply -= amount;
201
202
```

SWC-101 | ARITHMETIC OPERATION "-=" DISCOVERED

LINE 200

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
199   }
200   _totalSupply -= amount;
201
202   emit Transfer(account, address(0), amount);
203
204
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 466

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
465
466   _mint(owner(), 10 * 1e7 * (10 ** 18));
467   swapTokensAtAmount = totalSupply() / 5000;
468   }
469
470
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 466

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
465
466   _mint(owner(), 10 * 1e7 * (10 ** 18));
467   swapTokensAtAmount = totalSupply() / 5000;
468   }
469
470
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 466

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
465
466   _mint(owner(), 10 * 1e7 * (10 ** 18));
467   swapTokensAtAmount = totalSupply() / 5000;
468   }
469
470
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 467

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
466   _mint(owner(), 10 * 1e7 * (10 ** 18));
467   swapTokensAtAmount = totalSupply() / 5000;
468   }
469
470   receive() external payable {
471
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 525

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
524   function setSwapTokensAtAmount(uint256 newAmount) external onlyOwner{
525   require(newAmount > totalSupply() / 100000, "SwapTokensAtAmount must be greater
than 0.001% of total supply");
526   swapTokensAtAmount = newAmount;
527   emit SwapTokensAtAmountChanged(newAmount);
528   }
529
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 567

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
566   if(from == uniswapV2Pair) {
567   fees = amount * marketingFeeOnBuy / 100;
568   } else if (to == uniswapV2Pair) {
569   fees = amount * marketingFeeOnSell / 100;
570   } else {
571
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 567

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
566   if(from == uniswapV2Pair) {
567   fees = amount * marketingFeeOnBuy / 100;
568   } else if (to == uniswapV2Pair) {
569   fees = amount * marketingFeeOnSell / 100;
570   } else {
571
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 569

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
568   } else if (to == uniswapV2Pair) {
569   fees = amount * marketingFeeOnSell / 100;
570   } else {
571   fees = 0;
572   }
573
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 569

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
568   } else if (to == uniswapV2Pair) {
569   fees = amount * marketingFeeOnSell / 100;
570   } else {
571   fees = 0;
572   }
573
```

SWC-101 | ARITHMETIC OPERATION "-=" DISCOVERED

LINE 573

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
572   }
573   amount -= fees;
574   if(fees > 0) {
575   super._transfer(from, address(this), fees);
576   }
577
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 596

low SEVERITY

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

Source File

- MetaDeFi.sol

Locations

```
595
596   uint256 newBalance = address(this).balance - initialBalance;
597
598   sendBNB(payable(marketingWallet), newBalance);
599
600
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 586

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- MetaDeFi.sol

Locations

```
585   address[] memory path = new address[](2);
586   path[0] = address(this);
587   path[1] = uniswapV2Router.WETH();
588
589   uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
590
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 587

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- MetaDeFi.sol

Locations

```
586   path[0] = address(this);
587   path[1] = uniswapV2Router.WETH();
588
589   uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
590   tokenAmount,
591
```

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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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