Fantom

Smart Contract Audit Report

SYSFIXED

07 Apr 2021

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
Fantom	FTM	Binance Smart Chain

Addresses

Contract address	0xad29abb318791d579433d831ed122afeaf29dcfe
Contract deployer address	0x08adbaA6A215affd711F532ec219299ba1E5b9B7

Project Website

https://fantom.foundation/

Codebase

https://bscscan.com/address/0xad29abb318791d579433d831ed122afeaf29dcfe#code

SUMMARY

t Fantom, we're committed to providing technology that combines scalability, decentralization, and security. To turn this vision into reality, the Fantom Foundation is developing different parts of an open system and closely works with partners to support the adoption of Fantom technology. We are blockchain developers The Fantom Foundation has experience with blockchain development across the whole technology stack. From developing a consensus algorithm from scratch to middleware and a full-featured software suite, we built it. We are blockchain integrators Through the EVM, developers can utilize smart contracts on top of Fantom, and it allows projects to port their existing Ethereum dApps over to Fantom easily. Addtionally, Lachesis is ABCI compatible and can be seamlessly integrated into other blockchains as a separate consensus module.

Contract Summary

Documentation Quality

Fantom 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 Fantom 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 260, 351, 260 and 351.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 9, 95, 239, 321 and 474.

CONCLUSION

We have audited the Fantom project released on April 2021 to discover issues and identify potential security vulnerabilities in Fantom 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 Fantom 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. The current pragma Solidity directive is ""^0.6.0"". 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 Apr 06 2021 08:27:55 GMT+0000 (Coordinated Universal Time)
Finished	Wednesday Apr 07 2021 21:41:10 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	BEP20UpgradeableProxy (FTT).sol

Detected Issues

ID	Title	Severity	Status
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED	low	acknowledged
SWC-101	COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
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SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 260

low SEVERITY

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

Source File

- BEP20UpgradeableProxy (FTT).sol

Locations

```
259   constructor(address _logic, bytes memory _data) public payable {
260   assert(_IMPLEMENTATION_SLOT ==
bytes32(uint256(keccak256("eip1967.proxy.implementation")) - 1));
261   _setImplementation(_logic);
262   if(_data.length > 0) {
263   // solhint-disable-next-line avoid-low-level-calls
264
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 351

low SEVERITY

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

Source File

- BEP20UpgradeableProxy (FTT).sol

Locations

```
350   constructor(address _logic, address _admin, bytes memory _data) public payable
UpgradeableProxy(_logic, _data) {
351   assert(_ADMIN_SLOT == bytes32(uint256(keccak256("eip1967.proxy.admin")) - 1));
352   _setAdmin(_admin);
353   }
354
355
```

SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED

LINE 260

low SEVERITY

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

Source File

- BEP20UpgradeableProxy (FTT).sol

Locations

```
259   constructor(address _logic, bytes memory _data) public payable {
260   assert(_IMPLEMENTATION_SLOT ==
bytes32(uint256(keccak256("eip1967.proxy.implementation")) - 1));
261   _setImplementation(_logic);
262   if(_data.length > 0) {
263   // solhint-disable-next-line avoid-low-level-calls
264
```

SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED

LINE 351

low SEVERITY

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

Source File

- BEP20UpgradeableProxy (FTT).sol

Locations

```
350   constructor(address _logic, address _admin, bytes memory _data) public payable
UpgradeableProxy(_logic, _data) {
351   assert(_ADMIN_SLOT == bytes32(uint256(keccak256("eip1967.proxy.admin")) - 1));
352   _setAdmin(_admin);
353   }
354
355
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 9

low SEVERITY

The current pragma Solidity directive is ""^0.6.0"". 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

- BEP20UpgradeableProxy (FTT).sol

Locations

```
8
9   pragma solidity ^0.6.0;
10
11   /**
12   * @dev This abstract contract provides a fallback function that delegates all calls
to another contract using the EVM
13
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 95

low SEVERITY

The current pragma Solidity directive is ""^0.6.2"". 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

- BEP20UpgradeableProxy (FTT).sol

Locations

```
94
95    pragma solidity ^0.6.2;
96
97    /**
98    * @dev Collection of functions related to the address type
99
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 239

low SEVERITY

The current pragma Solidity directive is ""^0.6.0"". 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

- BEP20UpgradeableProxy (FTT).sol

Locations

```
238
239   pragma solidity ^0.6.0;
240
241
242
243
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 321

low SEVERITY

The current pragma Solidity directive is ""^0.6.0"". 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

- BEP20UpgradeableProxy (FTT).sol

Locations

```
320
321   pragma solidity ^0.6.0;
322
323
324   /**
325
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 474

low SEVERITY

The current pragma Solidity directive is ""^0.6.0"". 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

- BEP20UpgradeableProxy (FTT).sol

Locations

```
473
474   pragma solidity ^0.6.0;
475
476
477   contract BEP20UpgradeableProxy is TransparentUpgradeableProxy {
478
```

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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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ABOUT US

Sysfixed is a blockchain security certification organization established in 2021 with the objective to provide smart contract security services and verify their correctness in blockchain-based protocols. Sysfixed automatically scans for security vulnerabilities in Ethereum and other EVM-based blockchain smart contracts. Sysfixed a comprehensive range of analysis techniques—including static analysis, dynamic analysis, and symbolic execution—can accurately detect security vulnerabilities to provide an in-depth analysis report. With a vibrant ecosystem of world-class integration partners that amplify developer productivity, Sysfixed can be utilized in all phases of your project's lifecycle. Our team of security experts is dedicated to the research and improvement of our tools and techniques used to fortify your code.