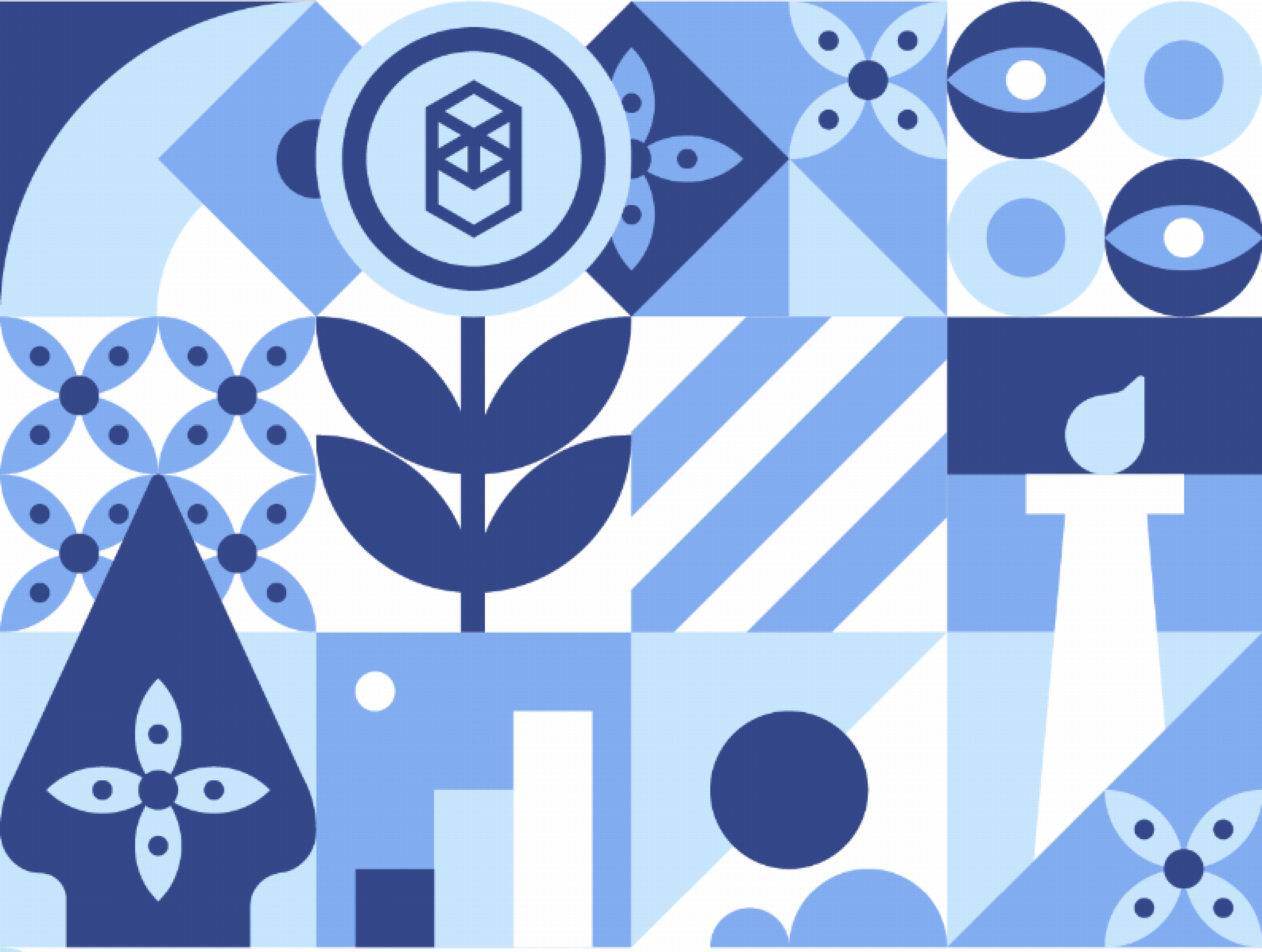

Fantohm

Smart Contract Audit Report

SYSFIXED

27 Oct 2021

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
Fantohm	FHM	Fantom

Addresses

Contract address	0xfa1fbb8ef55a4855e5688c0ee13ac3f202486286
Contract deployer address	0x3381e86306145b062cEd14790b01AC5384D23D82

Project Website

https://www.balance.capital/fhm-protocol

Codebase

https://ftmscan.com/address/0xfa1fbb8ef55a4855e5688c0ee13ac3f202486286#code

SUMMARY

FantOHM is NOT your average OHM fork, and in these docs we're going to show you why. Built on the one-and-only Fantom Opera Network, FantOHM has added a first-of-its-kind revenue generation strategy and stable coin in USDB. Based on the FHM token, FantOHM aims to be the decentralised reserve asset of the Fantom and Moonriver Networks. In simpler terms, we want FHM to be a safe place to store assets during times of volatility that simultaneously works to generate passive income in the form of compound interest for holders.

Contract Summary

Documentation Quality

Fantohm 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 Fantohm with the discovery of several low issues.

Test Coverage

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

Audit Findings Summary

- SWC-116 | It is recommended to use oracles for block values as a proxy for time on lines 796.

CONCLUSION

We have audited the Fantohm project released in October 2021 to discover issues and identify potential security vulnerabilities in Fantohm 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 Fantohm 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 control flow decisions made based on The block.timestamp environment variable. The block.timestamp environment variable is used to determine a control flow decision. Note that the values of variables like coinbase, gas limit, block number, and timestamp are predictable and can be manipulated by a malicious miner. Also, keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that the use of these variables introduces a certain level of trust in miners.

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.	PASS
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.	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.	ISSUE FOUND
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 Oct 26 2021 20:56:09 GMT+0000 (Coordinated Universal Time)
Finished	Wednesday Oct 27 2021 20:35:24 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	FantohmERC20Token.sol

Detected Issues

ID	Title	Severity	Status
SWC-116	A CONTROL FLOW DECISION IS MADE BASED ON THE BLOCK.TIMESTAMP ENVIRONMENT VARIABLE.	low	acknowledged

SWC-116 | A CONTROL FLOW DECISION IS MADE BASED ON THE BLOCK.TIMESTAMP ENVIRONMENT VARIABLE.

LINE 796

low SEVERITY

The block.timestamp environment variable is used to determine a control flow decision. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

Source File

- FantohmERC20Token.sol

Locations

```
795   ) public virtual override {
796   require(block.timestamp <= deadline, "Permit: expired deadline");
797
798   bytes32 hashStruct =
799   keccak256(abi.encode(PERMIT_TYPEHASH, owner, spender, amount,
_nonces[owner].current(), deadline));
800
```

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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.