HACKEN

SMART CONTRACT CODE REVIEW AND SECURITY ANALYSIS REPORT

Customer: Gate.io Token
Date: March 04th, 2022

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Document

Name	Smart Contract Code Review and Security Analysis Report for Gate.io.
Approved by	Andrew Matiukhin | CTO Hacken OU Evgeniy Bezuglyi | SC Department Head at Hacken OU
Type	ERC-20 token
Platform	EVM
Language	Solidity
Methods	Architecture Review, Functional Testing, Computer-Aided Verification, Manual Review
Repository	
Commit	
Deployed contract	htt://etherscanps.io/address/0xe66747a101bff2dba3697199dcce5b743b454759
Technical Documentation	YES
JS tests	YES
Website	https://gate.io/
Timeline	3 MARCH 2022 - 4 MARCH 2022
Changelog	4 MARCH 2022 - Initial Audit

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Introduction

Hacken OÜ (Consultant) was contracted by Gate.io (Customer) to conduct a Smart Contract Code Review and Security Analysis. This report presents the findings of the security assessment of the Customer's smart contracts.

Scope

The scope of the project is smart contracts in the repository:
Code:
https://etherscan.io/address/0xe66747a101bff2dba3697199dcce5b743b454759#code
Commit:
No
Technical Documentation: Yes
JS tests: Yes

We have scanned this smart contract for commonly known and more specific vulnerabilities. Here are some of the commonly known vulnerabilities that are considered:

Category	Check Item
Code review	▪ Reentrancy ▪ Ownership Takeover ▪ Timestamp Dependence ▪ Gas Limit and Loops ▪ Transaction-Ordering Dependence ▪ Style guide violation ▪ EIP standards violation ▪ Unchecked external call ▪ Unchecked math ▪ Unsafe type inference ▪ Implicit visibility level ▪ Deployment Consistency ▪ Repository Consistency
Functional review	▪ Business Logics Review ▪ Functionality Checks ▪ Access Control & Authorization ▪ Escrow manipulation ▪ Token Supply manipulation ▪ Assets integrity ▪ User Balances manipulation ▪ Data Consistency ▪ Kill-Switch Mechanism

Executive Summary

Score measurements details can be found in the corresponding section of the methodology.

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Documentation quality

The project has functional and technical requirements. Total Documentation Quality score is **10** out of **10**. The weight in the total score is **1**.

Code quality

The code follows official language style guides. Unit tests were provided. The score is **10** out of **10**. The weight in the total score is **1**.

Architecture quality

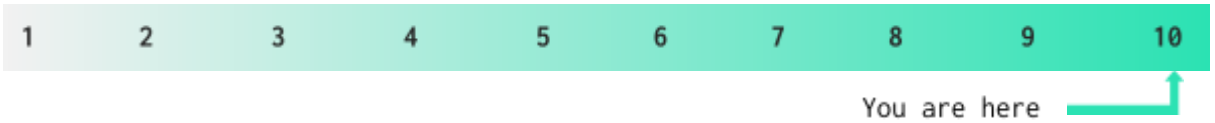
The smart contract of the project has clear architecture. Architecture quality score is **10** out of **10**. THe weight in the total score is **1**.

Security score

As a result of the audit, security engineers found **1** low severity issue. The security score is **10** out of **10**. All found issues are displayed in the “Issues overview” section of the report. The weight in the total score is **7**.

Summary

According to the assessment, the Customer's smart has the following score: **10**



Notices

1. The contract is pausable. The contract creator has an opportunity to block all the contract logic.

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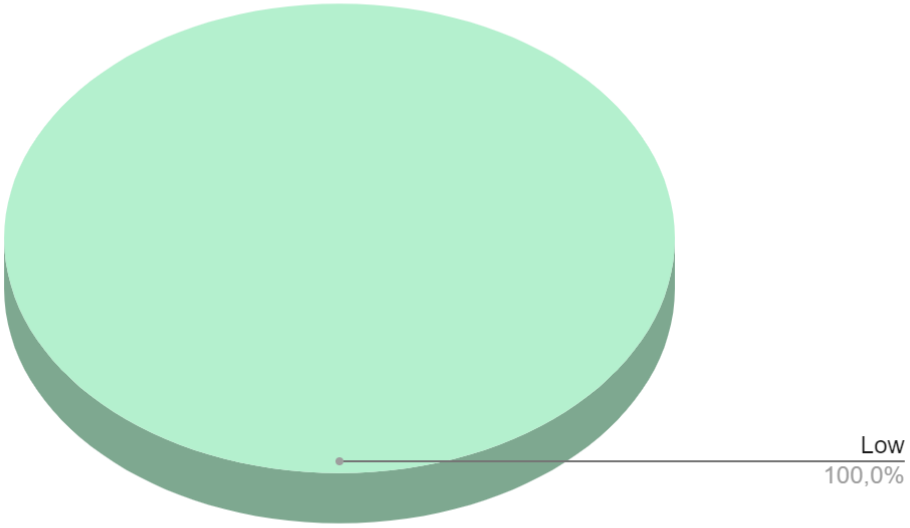
Graph 1. The distribution of vulnerabilities after the audit.



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Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to assets loss or data manipulations.
High	High-level vulnerabilities are difficult to exploit; however, they also have a significant impact on smart contract execution, e.g., public access to crucial functions.
Medium	Medium-level vulnerabilities are important to fix; however, they cannot lead to assets loss or data manipulations.
Low	Low-level vulnerabilities are mostly related to outdated, unused, etc. code snippets that cannot have a significant impact on execution

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Audit overview

Critical

No critical severity issues were found.

High

No high severity issues were found.

Medium

No medium severity issues were found.

Low

1. The contract has public functions which are not used internally.

   Contracts: GateChainToken

   Function: activeMode, resetMode, balanceOf, allowance, transfer, approve, transferFrom, burn, totalSupply, freeze, unfreeze.

   Recommendation: Replace functions visibility to external.

   Status: New

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Recommendations

1. It is recommended to use a recent version of the Solidity compiler.

   Contracts: GateChainToken

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Disclaimers

Hacken Disclaimer

The smart contracts given for audit have been analyzed by the best industry practices at the date of this report, in relation to cybersecurity vulnerabilities and issues in smart contract source code, the details of which are disclosed in this report (Source Code); the Source Code compilation, deployment, and functionality (performing the intended functions).

The audit makes no statements or warranties on the security of the code. It also cannot be considered a sufficient assessment regarding the utility and safety of the code, bug-free status, or any other contract statements. While we have done our best in conducting the analysis and producing this report, it is important to note that you should not rely on this report only — we recommend proceeding with several independent audits and a public bug bounty program to ensure the security of smart contracts.

Technical Disclaimer

Smart contracts are deployed and executed on a blockchain platform. However, the platform, its programming language, and other software related to the smart contract can have vulnerabilities that can lead to hacks. Thus, the audit cannot guarantee the explicit security of the audited smart contracts.