

# STAY **SAFU** AUDIT

SECURITY ASSESMENT: FEBRUARY 18TH, 2022

OLYMPUS MIGRATION CONTRACT

# **TABLE OF CONTENTS**

***I)* SUMMARY**

***II)* OVERVIEW**

***III)* FINDINGS**

***IV)* DISCLAIMER**

# SUMMARY

*This report has been prepared for **Olympus'** migration contract to discover issues and vulnerabilities in the source code of the **Olympus'** migration contract project as well as any contract dependencies that were not part of an officially recognized library.*

*The audit is based on the code of the following BSC testnet smart-contract:*

**TokenMigrator.sol** (<https://pastebin.com/dfjfrRb9>)

*A comprehensive examination has been performed, utilizing Static Analysis, Manual Review, and **Olympus'** migration contract Deployment techniques. The auditing process pays special attention to the following considerations:*

- Testing the smart-contract against both common and uncommon attack vectors
- Assessing the codebase to ensure compliance with current best practices and industry standards
- Ensuring contract logic meets the specifications and intentions of the client
- Cross referencing contract structure and implementation against similar smart-contract produced by industry leaders
- Through line-by-line manual review of the entire codebase by industry experts

# OVERVIEW

# VULNERABILITY SUMMARY

# UNDERSTANDING

The **Olympus'** Migration Contract is used to trade tokens from a fixed withdrawal date called **startTime**. It features a 5% bonus if the tokens are deposited before a certain date, called **bonusTime**. **bonusTime** can be changed, in order to postpone the date from which the bonus will end.

# FINDINGS

## Use 'immutable' instead of 'constant'

### Severity : informational

The **startTime** variable is set as **immutable**. **Immutable** means that this variable is a constant that can be instantiated in the constructor. Here the variable is hard-coded, which means that **startTime** could be set as **constant** without changing the contract's logic. Using the **immutable** keyword instead of **constant** will result in a lack of optimisation here as it is more computationally expensive - we therefore recommend changing this keyword to **constant**. For more information, see <https://docs.soliditylang.org/en/v0.6.5/contracts.html#immutable>.

## Use uint256 for decimals variable

### Severity : informational

Following industry standards, **decimals** variable should be **uint8** and not **uint256**. For more information, see <https://github.com/OpenZeppelin/openzeppelin->

contracts/blob/master/contracts/token/ERC20/ERC20.sol.

## Typo in error message

### Severity : informational

The error message of line 48 "**Migrator::must be after old bonustime**" contains the following typo '**bonustime**' should contain a space. The error message should be "**Migrator::must be after old bonus time**". We recommend using the clearest possible error messages for project development/maintenance and the user interface.

## Inconstent use of allowance mechanism

### Severity : minor

The **depositAll** function includes a check via the standard allowance mechanism, but not the **deposit** function. We recommend removing this check from **depositAll** as it consumes unnecessary gas (If the amount transferred were too large the transfer would fail and the function would stop, so there is no need to add a conditional structure)

## Unlocked compiler version

### Severity : minor

**Olympus'** migration contract does not have locked compiler version, meaning a range of compiler versions can be used. This can lead to differing bytecodes being produced depending on the compiler version, which can create confusion when debugging as bugs may be specific to a specific compiler version(s).

To rectify this, we recommend setting the compiler to a single version, the lowest version tested to be compatible with the code, an example of this change can be seen below.

Before	After
<b>pragma solidity &gt;=0.8.0&lt;0.9.0;</b>	<b>pragma solidity 0.8.0;</b>

## Conclusion

No major issue has been found in the **Olympus'** migration smart-contract. The findings we reported are low severity issues. The overall security of the smart-contract is very good, the only point that should be improved is the contract code's abidance to best practices.

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This report in no way provides investment advice, nor should be leveraged as investment advice of any sort. This report represents an extensive assessing process intending to help our customers increase the quality of their code while reducing the high level of risk presented by cryptographic tokens and blockchain technology.

Blockchain technology and cryptographic assets present a high level of ongoing risk.

**StaySAFU's** position is that each company and individual are responsible for their own due diligence and continuous security. **StaySAFU's** goal is to help reduce the attack vectors and the high level of variance associated with utilizing new and consistently changing technologies, and in no way claims any guarantee of security or functionality of the technology we agree to analyze.