



Wootrade Network Smart Contract Audit Report

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AUDITED DETAILS

Audited Project

| Project name | Token ticker | Blockchain |
|------------------|--------------|------------|
| Wootrade Network | WOO.e | Avalanche |

Addresses

| | |
|---------------------------|--|
| Contract address | 0xabc9547b534519ff73921b1fba6e672b5f58d083 |
| Contract deployer address | 0x50Ff3B278fCC70ec7A9465063d68029AB460eA04 |

Project Website

| |
|---|
| https://woo.org/ |
|---|

Codebase

| |
|---|
| https://snowtrace.io/address/0xabc9547b534519ff73921b1fba6e672b5f58d083#code |
|---|

SUMMARY

WOO Network is a deep liquidity network connecting traders, exchanges, institutions, and DeFi platforms with democratized access to the best-in-class liquidity and trading execution at lower or zero cost. WOO Token is used in the network's CeFi and DeFi products for staking and fee discounts.

Contract Summary

Documentation Quality

Wootrade Network provides a very good documentation with standard of solidity base code.

- The technical description is provided clearly and structured and also don't have any high risk issue.

Code Quality

The Overall quality of the basecode is standard.

- Standard solidity basecode and rules are already followed by Wootrade Network with the discovery of several low issues.

Test Coverage

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

Audit Findings Summary

- SWC-100 SWC-108 | Explicitly define visibility for all state variables on lines 545.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 13, 92, 119, 145, 449, 489 and 528.
- 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 728.
- SWC-115 | `tx.origin` should not be used for authorization, use `msg.sender` instead on lines 626, 626, 353, 423, 521, 397 and 424.

CONCLUSION

We have audited the Wootrade Network project released in December 2021 to discover issues and identify potential security vulnerabilities in Wootrade Network 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 in the Wootrade Network 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 that a floating pragma is set, a state variable visibility is not set, weak sources of randomness, tx.origin as a part of authorization control, and requirement violation.

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. | ISSUE FOUND |
| 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. | 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. | 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. | ISSUE FOUND |
| 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 grieving 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 | Thursday Dec 02 2021 19:48:31 GMT+0000 (Coordinated Universal Time) |
| Finished | Friday Dec 03 2021 23:50:53 GMT+0000 (Coordinated Universal Time) |
| Mode | Standard |
| Main Source File | BridgeToken.sol |

Detected Issues

[illegible]

| | | | |
|---------|--|-----|--------------|
| SWC-115 | USE OF TX.ORIGIN AS A PART OF AUTHORIZATION CONTROL. | low | acknowledged |
| SWC-123 | REQUIREMENT VIOLATION. | low | acknowledged |

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 13

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. 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

- BridgeToken.sol

Locations

```
12
13  pragma solidity ^0.8.0;
14
15  /**
16   * @dev Interface of the ERC20 standard as defined in the EIP.
17
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 92

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. 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

- BridgeToken.sol

Locations

```
91
92  pragma solidity ^0.8.0;
93
94
95  /**
96
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 119

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. 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

- BridgeToken.sol

Locations

```
118
119  pragma solidity ^0.8.0;
120
121  /*
122   * @dev Provides information about the current execution context, including the
123
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 145

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. 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

- BridgeToken.sol

Locations

```
144
145  pragma solidity ^0.8.0;
146
147
148
149
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 449

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. 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

- BridgeToken.sol

Locations

```
448  
449  pragma solidity ^0.8.0;  
450  
451  
452  
453
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 489

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. 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

- BridgeToken.sol

Locations

```
488
489  pragma solidity ^0.8.0;
490
491  library Roles {
492    struct Role {
493
```


SWC-103 | A FLOATING PRAGMA IS SET.

LINE 528

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. 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

- BridgeToken.sol

Locations

```
527
528  pragma solidity ^0.8.0;
529
530
531
532
```

SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 545

low SEVERITY

It is best practice to set the visibility of state variables explicitly. The default visibility for "swapTokens" is internal. Other possible visibility settings are public and private.

Source File

- BridgeToken.sol

Locations

```
544     }  
545     mapping(address => SwapToken) swapTokens;  
546  
547     mapping(uint256 => bool) public chainIds;  
548  
549
```

SWC-115 | USE OF "TX.ORIGIN" AS A PART OF AUTHORIZATION CONTROL.

LINE 626

low SEVERITY

The tx.origin environment variable has been found to influence a control flow decision. Note that using "tx.origin" as a security control might cause a situation where a user inadvertently authorizes a smart contract to perform an action on their behalf. It is recommended to use "msg.sender" instead.

Source File

- BridgeToken.sol

Locations

```
625 function unwrap(uint256 amount, uint256 chainId) public {
626     require(tx.origin == msg.sender, "Contract calls not supported.");
627     require(chainIds[chainId] == true, "Chain ID not supported.");
628     _burn(msg.sender, amount);
629     emit Unwrap(amount, chainId);
630 }
```

SWC-115 | USE OF TX.ORIGIN AS A PART OF AUTHORIZATION CONTROL.

LINE 626

low SEVERITY

The tx.origin environment variable has been found to influence a control flow decision. Note that using tx.origin as a security control might cause a situation where a user inadvertently authorizes a smart contract to perform an action on their behalf. It is recommended to use msg.sender instead.

Source File

- BridgeToken.sol

Locations

```
625 function unwrap(uint256 amount, uint256 chainId) public {  
626     require(tx.origin == msg.sender, "Contract calls not supported.");  
627     require(chainIds[chainId] == true, "Chain ID not supported.");  
628     _burn(msg.sender, amount);  
629     emit Unwrap(amount, chainId);  
630 }
```

SWC-115 | USE OF TX.ORIGIN AS A PART OF AUTHORIZATION CONTROL.

LINE 353

low SEVERITY

The tx.origin environment variable has been found to influence a control flow decision. Note that using tx.origin as a security control might cause a situation where a user inadvertently authorizes a smart contract to perform an action on their behalf. It is recommended to use msg.sender instead.

Source File

- BridgeToken.sol

Locations

```
352 function _transfer(address sender, address recipient, uint256 amount) internal
virtual {
353     require(sender != address(0), "ERC20: transfer from the zero address");
354     require(recipient != address(0), "ERC20: transfer to the zero address");
355
356     _beforeTokenTransfer(sender, recipient, amount);
357 }
```

SWC-115 | USE OF TX.ORIGIN AS A PART OF AUTHORIZATION CONTROL.

LINE 423

low SEVERITY

The tx.origin environment variable has been found to influence a control flow decision. Note that using tx.origin as a security control might cause a situation where a user inadvertently authorizes a smart contract to perform an action on their behalf. It is recommended to use msg.sender instead.

Source File

- BridgeToken.sol

Locations

```
422 function _approve(address owner, address spender, uint256 amount) internal virtual
423 {
424     require(owner != address(0), "ERC20: approve from the zero address");
425     require(spender != address(0), "ERC20: approve to the zero address");
426     _allowances[owner][spender] = amount;
427 }
```

SWC-115 | USE OF TX.ORIGIN AS A PART OF AUTHORIZATION CONTROL.

LINE 521

low SEVERITY

The tx.origin environment variable has been found to influence a control flow decision. Note that using tx.origin as a security control might cause a situation where a user inadvertently authorizes a smart contract to perform an action on their behalf. It is recommended to use msg.sender instead.

Source File

- BridgeToken.sol

Locations

```
520  {  
521    require(account != address(0), "Roles: account is the zero address");  
522    return role.bearer[account];  
523  }  
524  }  
525
```

SWC-115 | USE OF TX.ORIGIN AS A PART OF AUTHORIZATION CONTROL.

LINE 397

low SEVERITY

The tx.origin environment variable has been found to influence a control flow decision. Note that using tx.origin as a security control might cause a situation where a user inadvertently authorizes a smart contract to perform an action on their behalf. It is recommended to use msg.sender instead.

Source File

- BridgeToken.sol

Locations

```
396 function _burn(address account, uint256 amount) internal virtual {  
397     require(account != address(0), "ERC20: burn from the zero address");  
398  
399     _beforeTokenTransfer(account, address(0), amount);  
400  
401 }
```


SWC-115 | USE OF TX.ORIGIN AS A PART OF AUTHORIZATION CONTROL.

LINE 424

low SEVERITY

The tx.origin environment variable has been found to influence a control flow decision. Note that using tx.origin as a security control might cause a situation where a user inadvertently authorizes a smart contract to perform an action on their behalf. It is recommended to use msg.sender instead.

Source File

- BridgeToken.sol

Locations

```
423     require(owner != address(0), "ERC20: approve from the zero address");
424     require(spender != address(0), "ERC20: approve to the zero address");
425
426     _allowances[owner][spender] = amount;
427     emit Approval(owner, spender, amount);
428
```

SWC-123 | REQUIREMENT VIOLATION.

LINE 728

low SEVERITY

A requirement was violated in a nested call and the call was reverted as a result. Make sure valid inputs are provided to the nested call (for instance, via passed arguments).

Source File

- BridgeToken.sol

Locations

```
727     );  
728     swapToken.burnFrom(msg.sender, amount);  
729  
730     // Mint the new token.  
731     _mint(msg.sender, amount);  
732
```

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