



Custodiy (V3)

# Smart Contract Audit Report

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## Disclaimer

## About Us

# AUDITED DETAILS

## Audited Project

| Project name  | Token ticker | Blockchain          |
|---------------|--------------|---------------------|
| Custodiy (V3) | CTY          | Binance Smart Chain |

## Addresses

|                           |  |
|---------------------------|--|
| Contract address          | 0xba08da6b46e3dd153dd8b66a6e4cfd37a6359559 |
| Contract deployer address | 0x0D2CA37916B670685553416D220378485171dca3 |

## Project Website

<https://www.custodiy.com/>

## Codebase

<https://bscscan.com/address/0xba08da6b46e3dd153dd8b66a6e4cfd37a6359559#code>

# SUMMARY

The project was born in 2019. A team of Italian programmers supported by the Canadian company AMCO IT for code programming in the blockchain sector decided to conceive the project and implement the first drafts of the service. At the same time, the team began to expand, and the first collaborations with centralized banking institutions started to materialize. The same growth and Marketing developed within the project allow Custodiy to establish its internal community linked together by the vision of the development of the project and of the functions of the same web app already existing at CUSTODIY.COM. The token related to the Custodiy project is CTY \$, a ticket with the availability of 1,000,000 units.

## Contract Summary

### Documentation Quality

Custodiy (V3) 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 Custodiy (V3) 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 204, 226, 251, 280, 281, 410, 410, 411, 411, 412, 412, 413, 413, 443, 443, 473, 483, 494, 512, 523, 534, 552, 552, 559, 559, 566, 566, 573, 573, 580, 584, 584, 604, 605, 605, 607, 613, 614, 614, 615, 622, 622, 623, 623, 675, 675, 684, 684, 693, 693, 702, 702, 729, 742, 742, 743, 743, 744 and 744.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 17.
- 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 637, 638 and 730.
- SWC-120 | It is recommended to use external sources of randomness via oracles on lines 512 and 714.

## CONCLUSION

We have audited the Custodiy (V3) project released on February 2023 to discover issues and identify potential security vulnerabilities in Custodiy (V3) 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 Custodiy (V3) 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 some arithmetic operation issues, a floating pragma is set, the potential use of "block.number" as a source of randomness, out-of-bounds array access which the index access expression can cause an exception in case of the use of an invalid array index value.

# AUDIT RESULT

| Article                           | Category           | Description   | Result      |
|-----------------------------------|--------------------|---|-------------|
| Default Visibility                | SWC-100<br>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<br>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<br>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<br>SWC-121<br>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.  | ISSUE FOUND |
| 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<br>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 <code>abi.encodePacked()</code> with multiple variable length arguments can, in certain situations, lead to a hash collision.                      | PASS |
| Hardcoded gas amount       | SWC-134            | The <code>transfer()</code> and <code>send()</code> 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 |





|         |                                      |     |              |
|---------|--------------------------------------|-----|--------------|
| SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED  | low | acknowledged |
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| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED  | low | acknowledged |

|         |                                      |     |              |
|---------|--------------------------------------|-----|--------------|
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED  | low | acknowledged |
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| SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED  | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED  | low | acknowledged |

|         |  |     |              |
|---------|--|-----|--------------|
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED                      | low | acknowledged |
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| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED                      | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED                     | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED                      | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "***" DISCOVERED                    | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED                      | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "***" DISCOVERED                    | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED                      | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "***" DISCOVERED                    | low | acknowledged |
| SWC-103 | A FLOATING PRAGMA IS SET.                                | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS                               | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS                               | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS                               | low | acknowledged |
| SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS. | low | acknowledged |
| SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS. | low | acknowledged |

## SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 204

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
203     require(currentAllowance >= amount, "ERC20: transfer amount exceeds allowance");
204     _approve(sender, _msgSender(), currentAllowance - amount);
205
206     return true;
207 }
208
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 226

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
225  {  
226  _approve(_msgSender(), spender, _allowances[_msgSender()][spender] + addedValue);  
227  return true;  
228  }  
229  
230
```

## SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 251

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
250   require(currentAllowance >= subtractedValue, "ERC20: decreased allowance below
zero");
251   _approve(_msgSender(), spender, currentAllowance - subtractedValue);
252
253   return true;
254   }
255
```

## SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 280

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
279   require(senderBalance >= amount, "ERC20: transfer amount exceeds balance");
280   _balances[sender] = senderBalance - amount;
281   _balances[recipient] += amount;
282
283   emit Transfer(sender, recipient, amount);
284
```



## SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 281

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
280  _balances[sender] = senderBalance - amount;  
281  _balances[recipient] += amount;  
282  
283  emit Transfer(sender, recipient, amount);  
284  }  
285
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 410

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
409
410 uint256 public tokenLiquidityThreshold = 1_000 * 10**18;
411 uint256 public maxBuyLimit = 10_000 * 10**18;
412 uint256 public maxSellLimit = 10_000 * 10**18;
413 uint256 public maxWalletLimit = 20_000 * 10**18;
414
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 410

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
409
410 uint256 public tokenLiquidityThreshold = 1_000 * 10**18;
411 uint256 public maxBuyLimit = 10_000 * 10**18;
412 uint256 public maxSellLimit = 10_000 * 10**18;
413 uint256 public maxWalletLimit = 20_000 * 10**18;
414
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 411

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
410 uint256 public tokenLiquidityThreshold = 1_000 * 10**18;  
411 uint256 public maxBuyLimit = 10_000 * 10**18;  
412 uint256 public maxSellLimit = 10_000 * 10**18;  
413 uint256 public maxWalletLimit = 20_000 * 10**18;  
414  
415
```

## SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 411

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
410 uint256 public tokenLiquidityThreshold = 1_000 * 10**18;  
411 uint256 public maxBuyLimit = 10_000 * 10**18;  
412 uint256 public maxSellLimit = 10_000 * 10**18;  
413 uint256 public maxWalletLimit = 20_000 * 10**18;  
414  
415
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 412

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
411 uint256 public maxBuyLimit = 10_000 * 10**18;  
412 uint256 public maxSellLimit = 10_000 * 10**18;  
413 uint256 public maxWalletLimit = 20_000 * 10**18;  
414  
415 uint256 public genesis_block;  
416
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 412

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
411 uint256 public maxBuyLimit = 10_000 * 10**18;  
412 uint256 public maxSellLimit = 10_000 * 10**18;  
413 uint256 public maxWalletLimit = 20_000 * 10**18;  
414  
415 uint256 public genesis_block;  
416
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 413

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
412 uint256 public maxSellLimit = 10_000 * 10**18;  
413 uint256 public maxWalletLimit = 20_000 * 10**18;  
414  
415 uint256 public genesis_block;  
416  
417
```



## SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 413

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
412 uint256 public maxSellLimit = 10_000 * 10**18;  
413 uint256 public maxWalletLimit = 20_000 * 10**18;  
414  
415 uint256 public genesis_block;  
416  
417
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 443

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
442     constructor() ERC20("Custodiy (V3)", "CTY") {
443         _tokengeneration(msg.sender, 1_000_000 * 10**decimals());
444         exemptFee[msg.sender] = true;
445
446         // IRouter _router = IRouter(0x7a250d5630B4cF539739dF2C5dAcb4c659F2488D); //
UNISWAP V2
447
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 443

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
442     constructor() ERC20("Custodiy (V3)", "CTY") {
443         _tokengeneration(msg.sender, 1_000_000 * 10**decimals());
444         exemptFee[msg.sender] = true;
445
446         // IRouter _router = IRouter(0x7a250d5630B4cF539739dF2C5dAcb4c659F2488D); //
UNISWAP V2
447
```

## SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 473

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
472     require(currentAllowance >= amount, "ERC20: transfer amount exceeds allowance");
473     _approve(sender, _msgSender(), currentAllowance - amount);
474
475     return true;
476 }
477
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 483

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
482  {  
483  _approve(_msgSender(), spender, _allowances[_msgSender()][spender] + addedValue);  
484  return true;  
485  }  
486  
487
```

## SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 494

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
493   require(currentAllowance >= subtractedValue, "ERC20: decreased allowance below
zero");
494   _approve(_msgSender(), spender, currentAllowance - subtractedValue);
495
496   return true;
497   }
498
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 512

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
511
512   if(block.number < genesis_block + 50 && sender == pair) {
513     nonCustodial[recipient] = true;
514   }
515
516
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 523

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
522     require(  
523     balanceOf(recipient) + amount <= maxWalletLimit,  
524     "You are exceeding maxWalletLimit"  
525     );  
526     }  
527
```



## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 534

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
533     require(  
534     balanceOf(recipient) + amount <= maxWalletLimit,  
535     "You are exceeding maxWalletLimit"  
536     );  
537     }  
538
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 552

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
551 feeswap =
552 sellTaxes.liquidity +
553 sellTaxes.marketing +
554 sellTaxes.developer;
555 feesum = feeswap;
556
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 552

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
551 feeswap =
552 sellTaxes.liquidity +
553 sellTaxes.marketing +
554 sellTaxes.developer;
555 feesum = feeswap;
556
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 559

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
558     feeswap =
559     taxes.liquidity +
560     taxes.marketing +
561     taxes.developer ;
562     feesum = feeswap;
563
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 559

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
558     feeswap =
559     taxes.liquidity +
560     taxes.marketing +
561     taxes.developer ;
562     feesum = feeswap;
563
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 566

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
565     feeswap =
566     transferTaxes.liquidity +
567     transferTaxes.marketing +
568     transferTaxes.developer ;
569     feesum = feeswap;
570
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 566

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
565     feeswap =
566     transferTaxes.liquidity +
567     transferTaxes.marketing +
568     transferTaxes.developer ;
569     feesum = feeswap;
570
```

## SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 573

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
572
573     fee = (amount * feesum) / 100;
574
575     //send fees if threshold has been reached
576     //don't do this on buys, breaks swap
577
```



## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 573

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
572
573     fee = (amount * feesum) / 100;
574
575     //send fees if threshold has been reached
576     //don't do this on buys, breaks swap
577
```

## SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 580

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
579 //rest to recipient
580 super._transfer(sender, recipient, amount - fee);
581 if (fee > 0) {
582 //send the fee to the contract
583 if (feeswap > 0) {
584
```

## SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 584

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
583     if (feeswap > 0) {  
584         uint256 feeAmount = (amount * feeswap) / 100;  
585         super._transfer(sender, address(this), feeAmount);  
586     }  
587  
588
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 584

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
583     if (feeswap > 0) {  
584         uint256 feeAmount = (amount * feeswap) / 100;  
585         super._transfer(sender, address(this), feeAmount);  
586     }  
587  
588
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 604

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
603 // Split the contract balance into halves
604 uint256 denominator = feeswap * 2;
605 uint256 tokensToAddLiquidityWith = (contractBalance * swapTaxes.liquidity) /
606 denominator;
607 uint256 toSwap = contractBalance - tokensToAddLiquidityWith;
608
```

## SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 605

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
604 uint256 denominator = feeswap * 2;
605 uint256 tokensToAddLiquidityWith = (contractBalance * swapTaxes.liquidity) /
606 denominator;
607 uint256 toSwap = contractBalance - tokensToAddLiquidityWith;
608
609
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 605

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
604 uint256 denominator = feeswap * 2;
605 uint256 tokensToAddLiquidityWith = (contractBalance * swapTaxes.liquidity) /
606 denominator;
607 uint256 toSwap = contractBalance - tokensToAddLiquidityWith;
608
609
```

## SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 607

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
606 denominator;  
607 uint256 toSwap = contractBalance - tokensToAddLiquidityWith;  
608  
609 uint256 initialBalance = address(this).balance;  
610  
611
```



# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 613

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
612
613  uint256 deltaBalance = address(this).balance - initialBalance;
614  uint256 unitBalance = deltaBalance / (denominator - swapTaxes.liquidity);
615  uint256 ethToAddLiquidityWith = unitBalance * swapTaxes.liquidity;
616
617
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 614

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
613 uint256 deltaBalance = address(this).balance - initialBalance;
614 uint256 unitBalance = deltaBalance / (denominator - swapTaxes.liquidity);
615 uint256 ethToAddLiquidityWith = unitBalance * swapTaxes.liquidity;
616
617 if (ethToAddLiquidityWith > 0) {
618
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 614

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
613     uint256 deltaBalance = address(this).balance - initialBalance;
614     uint256 unitBalance = deltaBalance / (denominator - swapTaxes.liquidity);
615     uint256 ethToAddLiquidityWith = unitBalance * swapTaxes.liquidity;
616
617     if (ethToAddLiquidityWith > 0) {
618
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 615

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
614 uint256 unitBalance = deltaBalance / (denominator - swapTaxes.liquidity);
615 uint256 ethToAddLiquidityWith = unitBalance * swapTaxes.liquidity;
616
617 if (ethToAddLiquidityWith > 0) {
618     // Add liquidity to pancake
619 }
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 622

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
621
622  uint256 marketingAmt = unitBalance * 2 * swapTaxes.marketing;
623  uint256 developerAmt = unitBalance * 2 * swapTaxes.developer;
624  if (marketingAmt > 0) {
625    payable(marketingWallet).sendValue(marketingAmt);
626
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 622

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
621
622     uint256 marketingAmt = unitBalance * 2 * swapTaxes.marketing;
623     uint256 developerAmt = unitBalance * 2 * swapTaxes.developer;
624     if (marketingAmt > 0) {
625         payable(marketingWallet).sendValue(marketingAmt);
626     }
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 623

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
622 uint256 marketingAmt = unitBalance * 2 * swapTaxes.marketing;  
623 uint256 developerAmt = unitBalance * 2 * swapTaxes.developer;  
624 if (marketingAmt > 0) {  
625 payable(marketingWallet).sendValue(marketingAmt);  
626 }  
627
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 623

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
622 uint256 marketingAmt = unitBalance * 2 * swapTaxes.marketing;
623 uint256 developerAmt = unitBalance * 2 * swapTaxes.developer;
624 if (marketingAmt > 0) {
625 payable(marketingWallet).sendValue(marketingAmt);
626 }
627
```



## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 675

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
674   require(new_amount <= 20_000 && new_amount > 0, "Swap threshold amount should be
lower or euqal to 1% of tokens");
675   tokenLiquidityThreshold = new_amount * 10**decimals();
676   }
677
678   function SetBuyTaxes(
679
```

## SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 675

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
674   require(new_amount <= 20_000 && new_amount > 0, "Swap threshold amount should be
lower or euqal to 1% of tokens");
675   tokenLiquidityThreshold = new_amount * 10**decimals();
676   }
677
678   function SetBuyTaxes(
679
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 684

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
683   taxes = Taxes(_marketing, _liquidity, _developer);
684   require((_marketing + _liquidity + _developer) <= 15, "Must keep fees at 15% or
less");
685   }
686
687   function SetSellTaxes(
688
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 684

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
683   taxes = Taxes(_marketing, _liquidity, _developer);
684   require((_marketing + _liquidity + _developer) <= 15, "Must keep fees at 15% or
less");
685   }
686
687   function SetSellTaxes(
688
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 693

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
692   sellTaxes = Taxes(_marketing, _liquidity, _developer);
693   require((_marketing + _liquidity + _developer) <= 99, "Must keep fees at 99% or
less");
694   }
695
696   function SetTransferTaxes(
697
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 693

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
692   sellTaxes = Taxes(_marketing, _liquidity, _developer);
693   require((_marketing + _liquidity + _developer) <= 99, "Must keep fees at 99% or
less");
694   }
695
696   function SetTransferTaxes(
697
```

## SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 702

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
701  transferTaxes = Taxes(_marketing, _liquidity, _developer);
702  require((_marketing + _liquidity + _developer) <= 99, "Must keep fees at 99% or
less");
703  }
704
705  function updateRouterAndPair(address newRouter, address newPair) external onlyOwner
{
706
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 702

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
701  transferTaxes = Taxes(_marketing, _liquidity, _developer);
702  require((_marketing + _liquidity + _developer) <= 99, "Must keep fees at 99% or
less");
703  }
704
705  function updateRouterAndPair(address newRouter, address newPair) external onlyOwner
{
706
```



## SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 729

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
728 function bulkExemptFee(address[] memory accounts, bool state) external onlyOwner {  
729     for (uint256 i = 0; i < accounts.length; i++) {  
730         exemptFee[accounts[i]] = state;  
731     }  
732 }  
733
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 742

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
741   require(maxWallet >= 10_000, "Cannot set max wallet amount lower than 1%");
742   maxBuyLimit = maxBuy * 10**decimals();
743   maxSellLimit = maxSell * 10**decimals();
744   maxWalletLimit = maxWallet * 10**decimals();
745   }
746
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 742

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
741   require(maxWallet >= 10_000, "Cannot set max wallet amount lower than 1%");
742   maxBuyLimit = maxBuy * 10**decimals();
743   maxSellLimit = maxSell * 10**decimals();
744   maxWalletLimit = maxWallet * 10**decimals();
745   }
746
```

## SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 743

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
742     maxBuyLimit = maxBuy * 10**decimals();
743     maxSellLimit = maxSell * 10**decimals();
744     maxWalletLimit = maxWallet * 10**decimals();
745 }
746
747
```

## SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 743

### low SEVERITY

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

### Source File

- CustodiyV3.sol

### Locations

```
742     maxBuyLimit = maxBuy * 10**decimals();
743     maxSellLimit = maxSell * 10**decimals();
744     maxWalletLimit = maxWallet * 10**decimals();
745 }
746
747
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 744

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
743     maxSellLimit = maxSell * 10**decimals();
744     maxWalletLimit = maxWallet * 10**decimals();
745 }
746
747 function rescueBNB(uint256 weiAmount) external onlyOwner {
748
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 744

## low SEVERITY

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

## Source File

- CustodiyV3.sol

## Locations

```
743     maxSellLimit = maxSell * 10**decimals();
744     maxWalletLimit = maxWallet * 10**decimals();
745 }
746
747 function rescueBNB(uint256 weiAmount) external onlyOwner {
748
```

## SWC-103 | A FLOATING PRAGMA IS SET.

LINE 17

### low SEVERITY

The current pragma Solidity directive is ""^0.8.17"". 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

- CustodiyV3.sol

### Locations

```
16
17  pragma solidity ^0.8.17;
18
19  abstract contract Context {
20  function _msgSender() internal view virtual returns (address) {
21
```



## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 637

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- CustodiyV3.sol

### Locations

```
636 address[] memory path = new address[](2);
637 path[0] = address(this);
638 path[1] = router.WETH();
639
640 _approve(address(this), address(router), tokenAmount);
641
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 638

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- CustodiyV3.sol

### Locations

```
637 path[0] = address(this);
638 path[1] = router.WETH();
639
640 _approve(address(this), address(router), tokenAmount);
641
642
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 730

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- CustodiyV3.sol

### Locations

```
729   for (uint256 i = 0; i < accounts.length; i++) {  
730     exemptFee[accounts[i]] = state;  
731   }  
732 }  
733  
734
```

## SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.

LINE 512

### low SEVERITY

The environment variable "block.number" looks like it might be used as a source of randomness. 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

- CustodiyV3.sol

### Locations

```
511
512  if(block.number < genesis_block + 50 && sender == pair) {
513  nonCustodial[recipient] = true;
514  }
515
516
```

## SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.

LINE 714

### low SEVERITY

The environment variable "block.number" looks like it might be used as a source of randomness. 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

- CustodiyV3.sol

### Locations

```
713 providingLiquidity = true;
714 genesis_block = block.number;
715 }
716
717 function updateWallets(address _marketingWallet, address _devWallet) external
onlyOwner {
718
```

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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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