

Security Assessment

DUST SWAP

Verified On Feb 4th, 2024

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PREPARED FOR:

DUST SWAP

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Document Properties


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1.0	February 04, 2024	James BK	Final Released
1.0-AP	January 04, 2024	Benny Matin	Release Candidate

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In the following, we show the specific pull request and the commit hash value used in this audit.

- <https://github.com/DustSwapOfficial/contract> (AX2P590)
- <https://github.com/DustSwapOfficial/contract/tree/main/token> (9dYf778)

About Vital Block Security

Vital Block Security provides professional, thorough, fast, and easy-to-understand smart contract security audit. We do in-depth and penetrative static, manual, automated, and intelligent analysis of the smart contract. Some of our automated scans include tools like ConsenSys MythX, Mythril, Slither, Surya. We can audit custom smart contracts, DApps, Rust, NFTs, etc (including the service of smart contract auditing). We are reachable at Telegram (https://t.me/vital_block), Twitter (http://twitter.com/Vb_Audit), or Email (info@vitalblock.org).

Table 1.2: Vulnerability Severity Classification

Impact	High	Medium	Low
	Critical	High	Medium
	High	Medium	Low
Low	Medium	Low	Low
Likelihood			

Methodology (1)

To standardize the evaluation, we define the following terminology based on the OWASP Risk Rating Methodology [4]:

- Likelihood represents how likely a particular vulnerability is to be uncovered and exploited in the wild;
- Impact measures the technical loss and business damage of a successful attack;
- Severity demonstrates the overall criticality of the risk.

SCOPE OF WORK

Vital Block was consulted by **DUST SWAP** to conduct the smart contract audit of its Rust source code. The audit scope of work is strictly limited to mentioned .Rust file only:

Odustswap.sol

 External contracts and/or interfaces dependencies are not checked due to being out of scope.

Verify audited contract code Repo.

Public Contract Link

<https://github.com/DustSwapOfficial/contract/tree/main/token>

<https://github.com/DustSwapOfficial/contract/tree/main/router>

<https://github.com/DustSwapOfficial/contract/tree/main/router/contracts>

<https://github.com/DustSwapOfficial/contract/tree/main/factory>

<https://github.com/DustSwapOfficial/contract/tree/main/factory/contracts>

<https://github.com/DustSwapOfficial/contract/blob/main/token/DustToken.sol>

AUDIT METHODOLOGY

Smart contract audits are conducted using a set of standards and procedures. Mutual collaboration is essential to performing an effective smart contract audit. Here's a brief overview of Vital Block Security auditing process and methodology:

CONNECT

- The onboarding team gathers source codes, and specifications to make sure we understand the size, and scope of the smart contract audit.

AUDIT

- Automated analysis is performed to identify common contract vulnerabilities. We may use the following third-party frameworks and dependencies to perform the automated analysis:
 - Remix IDE Developer Tool
 - Open Zeppelin Code Analyzer
 - SWC Vulnerabilities Registry
 - DEX Dependencies, e.g., Pancakeswap, Uniswap
- Simulations are performed to identify centralized exploits causing contract and/or trade locks.
- A manual line-by-line analysis is performed to identify contract issues and centralized privileges.

We may inspect below mentioned common contract vulnerabilities, and centralized exploits:

Centralized Exploits	<ul style="list-style-type: none">○ Token Supply Manipulation○ Access Control and Authorization○ Assets Manipulation○ Ownership Control○ Liquidity Access○ Stop and Pause Trading○ Ownable Library Verification
----------------------	---

Common Contract Vulnerabilities

- **Integer Overflow**
- **Lack of Arbitrary limits**
- **Incorrect Inheritance Order**
- **Typographical Errors**
- **Requirement Violation**
- **Gas Optimization**
- **Coding Style Violations**
- **Re-entrancy**
- **Third-Party Dependencies**
- **Potential Sandwich Attacks**
- **Irrelevant Codes**
- **Divide before multiply**
- **Conformance to Solidity Naming Guides**
- **Compiler Specific Warnings**
- **Language Specific Warnings**

REPORT

- **The auditing team provides a preliminary report specifying all the checks which have been performed and the findings thereof.**
- **The client's development team reviews the report and makes amendments to the codes.**
- **The auditing team provides the final comprehensive report with open and unresolved issues.**

PUBLISH

- **The client may use the audit report internally or disclose it publicly.**


 **It is important to note that there is no pass or fail in the audit, it is recommended to view the audit as an unbiased assessment of the safety of solidity codes.**

Table 1.0 The Full Audit Checklist

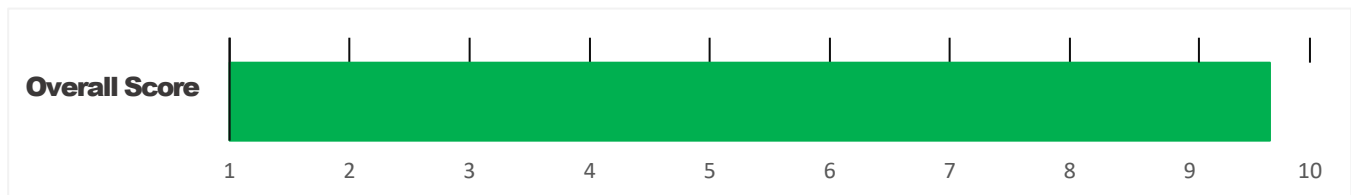
Category	Checklist Items
Basic Coding Bugs	Constructor Mismatch
	Ownership Takeover
	Redundant Fallback Function
	Overflows & Underflows
	Reentrancy
	Money-Giving Bug
	Blackhole
	Unauthorized Self-Destruct
	Revert DoS
	Unchecked External Call
	Gasless Send
	Send Instead Of Transfer
	Costly Loop
	(Unsafe) Use Of Untrusted Libraries
	(Unsafe) Use Of Predictable Variables
	Transaction Ordering Dependence
	Deprecated Uses
Semantic Consistency Checks	Semantic Consistency Checks
Advanced DeFi Scrutiny	Business Logics Review
	Functionality Checks
	Authentication Management
	Access Control & Authorization
	Oracle Security
	Digital Asset Escrow
	Kill-Switch Mechanism
	Operation Trails & Event Generation
	ERC20 Idiosyncrasies Handling
	Frontend-Contract Integration
	Deployment Consistency
	Holistic Risk Management
Additional Recommendations	Avoiding Use of Variadic Byte Array
	Using Fixed Compiler Version
	Making Visibility Level Explicit
	Making Type Inference Explicit
	Adhering To Function Declaration Strictly
	Following Other Best Practices

EXECUTIVE SUMMARY

Vital Block Security has performed the automated and manual analysis of the **DUST SWAP** Rust code. The code was reviewed for common contract vulnerabilities and centralized exploits. Here's a quick audit summary:

Status	Critical ! 🔴	Major " 🟡	Medium # 🟡	Minor \$ 🟢	Unknown % 🟤
Open	0	0	0	1	0
Acknowledged	0	0	1	3	0
Resolved	0	0	1	0	2
Noteworthy onlyOwner Privileges	Set Taxes and Ratios, Airdrop, Set Protection Settings, Set Reward Properties, Set Reflector Settings, Set Swap Settings, Set Pair and Router				

DUST SWAP Smart contract has achieved the following score: **97.0**



- i** Please note that smart contracts deployed on blockchains aren't resistant to exploits, vulnerabilities and/or hacks. Blockchain and cryptography assets utilize new and emerging technologies. These technologies present a high level of ongoing risks. For a detailed understanding of risk severity, source code vulnerability, and audit limitations, kindly review the audit report thoroughly.
- i** Please note that centralization privileges regardless of their inherited risk status - constitute an elevated impact on smart contract safety and security.

CENTRALIZED PRIVILEGES

Centralization risk is the most common cause of cryptography asset loss. When a smart contract has a privileged role, the risk related to centralization is elevated.

There are some well-intended reasons have privileged roles, such as:

- **Privileged roles can be granted the power to `pause()` the contract in case of an external attack.**
- **Privileged roles can use functions like, `include()`, and `exclude()` to add or remove wallets from fees, swap checks, and transaction limits. This is useful to run a presale and to list on an exchange.**

Authorizing privileged roles to externally-owned-account (EOA) is dangerous. Lately, centralization-related losses are increasing in frequency and magnitude.






- **The client can lower centralization-related risks by implementing below mentioned practices:**
- **Privileged role's private key must be carefully secured to avoid any potential hack.**
- **Privileged role should be shared by multi-signature (multi-sig) wallets.**
- **Authorized privilege can be locked in a contract, user voting, or community DAO can be introduced to unlock the privilege.**
- **Renouncing the contract ownership, and privileged roles.**
- **Remove functions with elevated centralization risk.**

 **Understand the project's initial asset distribution. Assets in the liquidity pair should be locked.**

Assets outside the liquidity pair should be locked with a release schedule.

RISK CATEGORIES

Smart contracts are generally designed to hold, approve, and transfer tokens. This makes them very tempting attack targets. A successful external attack may allow the external attacker to directly exploit. A successful centralization-related exploit may allow the privileged role to directly exploit. All risks which are identified in the audit report are categorized here for the reader to review:

Risk Type	Definition
Critical ! 	These risks could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.
Major " 	These risks are hard to exploit but very important to fix, they carry an elevated risk of smart contract manipulation, which can lead to high-risk severity.
Medium # 	These risks should be fixed, as they carry an inherent risk of future exploits, and hacks which may or may not impact the smart contract execution. Low-risk re-entrancy-related vulnerabilities should be fixed to deter exploits.
Minor \$ 	These risks do not pose a considerable risk to the contract or those who interact with it. They are code-style violations and deviations from standard practices. They should be highlighted and fixed nonetheless.
Unknown % 	These risks pose uncertain severity to the contract or those who interact with it. They should be fixed immediately to mitigate the risk uncertainty.

All statuses which are identified in the audit report are categorized here for the reader to review:

Status Type	Definition
Open	Risks are open.
Acknowledged	Risks are acknowledged, but not fixed.
Resolved	Risks are acknowledged and fixed.

Key Findings

Overall, these contracts are well-designed and engineered, though the implementation can be improved by resolving the identified issues (shown in Table [2.1](#)), 2 medium-severity vulnerabilities, 3 low-severity vulnerabilities, and 2 informational recommendations.

Table 2.1: Key Lenny Token Audit Findings

ID	Severity	Title	Category	Status
LDY-001	Informational	In updateForMinter , the following equation is used inside an unchecked block	Coding Practice	Fixed
LDY-002	Low	In updateFormapping , the following equation is used inside an unchecked block	Business Logic	Fixed
LDY-003	Low	In updateForAmount, Relevant Function Snippet	Coding Practice	Fixed
LDY-004	Informational	updateForbalance, Relevant Function Snippet	Coding Practice	Fixed
LDY-005	Acknowledge	In updateForOwner, Relevant Function Snippet	Business Logic	Fixed






Beside the identified issues, we emphasize that for any user-facing applications and services, it is always important to develop necessary risk-control mechanisms and make contingency plans, which may need to be exercised before the mainnet deployment. The risk-control mechanisms should kick in at the very moment when the contracts are being deployed on mainnet. Please refer to page [10](#) for details.

AUDIT SCOPE

DUST SWAP

ID	Repo	Comment	File	SHM321 Checksum
DBY	DustSwapOfficial/contract/tree/main/token	cC512486	DustToken.sol	6788099YIRHVS853PKFMGHEF4430 9200KDHFCBUGIJN
DBI	DustSwapOfficial/contract/tree/main/token	cC512486	DustToken.sol	347520JHDB7549H22H3BVDIOETYUH F009JBIKBDI33BJ4
DBW	DustSwapOfficial/contract/tree/main/token	cC512486	DustToken.sol	1988Y73HUGFDINN353840NFMTEJER 73649RGFIMDIDH
DBG	DustSwapOfficial/contract/tree/main/token	cC512486	DustToken.sol	4438648TEOHB6378309EHROECNEP OEJDNETE8EYEU3
DBL	DustSwapOfficial/contract/tree/main/token	cC512486	DustToken.sol	66390028765RVNKDBYFTGW553T2K OEHIUJJJIJE
DBA	DustSwapOfficial/contract/tree/main/token	cC512486	DustToken.sol	09825539BDYG543DVNKOMIKEBYR JUFHHFHJFIE333222
DBJ	DustSwapOfficial/contract/tree/main/router	cC512486	DustSwapRouter.sol	8654RJVT3DWI865YK26437903JDDGG DHGWY6E
DBE	DustSwapOfficial/contract/tree/main/router	cC512486	DustSwapRouter.sol	7763888636TGYGFFTFHBETT66TFTCT VYBHYT
DBP	DustSwapOfficial/contract/tree/main/router	cC512486	DustSwapRouter.sol	88530486494YRHFEICBGEIEGWTWY WUHEJEHEIE33U3
DBM	DustSwapOfficial/contract/tree/main/router	cC512486	DustSwapRouter.sol	1209873KHJLKJNFJHGE987639900297 74BCUHHDDU239
DBV	DustSwapOfficial/contract/tree/main/factory	cC512486	DustswapFactory.sol	23456UGFYUHE98756EFHJHE7654ES DFGHGERTYUJ3897
DBQ	DustSwapOfficial/contract/tree/main/factory	cC512486	DustswapFactory.sol	37889UHBIONE07TYRDFGVBN567893 9IJSFVDYUHDIC
DBS	DustSwapOfficial/contract/tree/main/factory	cC512486	DustswapFactory.sol	678903098TFHJKFCPOIUGFGHJKE986 5ERGBEIVBHE8767
DBR	DustSwapOfficial/contract/tree/main/factory	cC512480	DustswapFactory.sol	987655DFGBNFCOI56789UIYHGGHEJ DIUYTRDCVBN3459
DCD	contract/tree/main/factory/contracts	cC512481	DustswapFactory.sol	3348y9808hgtrusvnm43100ejfoj gfnut8496230hb574he
DHU	contract/tree/main/factory/contracts	cC512481	DustswapFactory.sol	9864byf5f379eig28ffre64085jv16 13251guhkd mue87
DGG	contract/tree/main/factory/contracts	cC512481	DustswapFactory.sol	7ej2d8jg765tjfiowg538ij74dwftvy 6478ij3gs820
DTR	contract/tree/main/factory/contracts	cC512481	DustswapFactory.sol	864fr46de438hdguw903rfdcb246 dbuhb2917enk

AUTOMATED ANALYSIS

Symbol	Definition
	Function modifies state
	Function is payable
	Function is internal
	Function is private
	Function is important

```

**DUST SWAP** | Interface | |||
| L | totalSupply | External ! | ! | NO ! |
| L | decimals | External ! | ! | NO ! |
| L | symbol | External ! | ! | NO ! |
| L | name | External ! | ! | NO ! |
| L | getOwner | External ! | | NO ! |
| L | balanceOf | External ! | ! | NO ! |
| L | transfer | External ! | " ! ! | NO ! |
| L | allowance | External ! | ! | NO ! |
| L | approve | External ! | " ! ! | NO ! |
| L | transferFrom | External ! | " | NO ! |
|||||
**IFactoryV2** | Interface | |||
| L | getPair | External ! | | NO ! |
| L | createPair | External ! | " | NO ! |
|||||
**IV2Pair** | Interface | |||
| L | factory | External ! | | NO ! |
| L | getReserves | External ! | | NO ! |
| L | sync | External ! | " | NO ! |

```

|||||

| ****IRouter01**** | Interface | |||

| L | factory | External ! | |NO!|

| L | ETH | External ! | |NO!|

| L | addLiquidityETH | External ! | # |NO!|

| L | addLiquidity | External ! | " |NO!|

| L | swapExactETHForTokens | External ! | # |NO!|

| L | getAmountsOut | External ! | |NO!|

| L | getAmountsIn | External ! | |NO!|

|||||

| ****IRouter02**** | Interface | IRouter01 |||

| L | swapExactTokensForETHSupportingFeeOnTransferTokens | External ! | " |NO!|

| L | swapExactETHForTokensSupportingFeeOnTransferTokens | External ! | # |NO!|

| L | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ! | " ! |NO!|

| L | swapExactTokensForTokens | External ! | " |NO!|

|||||

| ****Protections**** | Interface | |||

| L | checkUser | External ! | " ! |NO!|

| L | setLaunch | External ! | " ! |NO!|

| L | setLpPair | External ! | " ! |NO!|

| L | **DUST** | External ! | " |NO!|

| L | removeSniper | External ! | " |NO!|

|||||

| ****Cashier**** | Interface | |||

| L | setRewardsProperties | External ! | " |NO!|

| L | tally | External ! | " |NO!|

| L | load | External ! | # |NO!|

| L | cashout | External ! | " |NO!|

| L | giveMeWelfarePlease | External ! | " |NO!|

| L | getTotalDistributed | External ! | |NO!|

| L | getUserInfo | External ! | |NO!|

| L | getUserRealizedRewards | External ! | |NO!|

```

| L | getPendingRewards | External ! | | NO ! |
| L | initialize | External ! | " | NO ! |
| L | getCurrentReward | External ! | | NO ! |
|||||
| **SOL** | Implementation | SafeMath |||
| L | <Constructor> | Public ! | # | NO ! |
| L | transferOwner | External ! | " | onlyOwner |
| L | renounceOwnership | External ! | " | NO ! |
| L | setOperator | Public ! | " | NO ! |
| L | renounceOriginalDeployer | External ! | " | NO ! |
| L | <Receive Ether> | External ! | # | NO ! |
| L | totalSupply | External ! | | NO ! |
| L | decimals | External ! | | NO ! |
| L | symbol | External ! | | NO ! |
| L | name | External ! | | NO ! |
| L | getOwner | External ! | ! | NO ! |
| L | balanceOf | Public ! | ! | NO ! |
| L | allowance | External ! | ! | NO ! |
| L | approve | External ! | " ! | NO ! |
| L | _approve | Internal $ | " | |
| L | approveContractContingency | Public ! | " ! | onlyOwner |
| L | transfer | External ! | " | NO ! |
| L | transferFrom | External ! | " | NO ! |
| L | setNewRouter | External ! | " | onlyOwner |
| L | setLpPair | External ! | " | onlyOwner |
| L | setInitializers | External ! | " | onlyOwner |
| L | isExcludedFromFees | External ! | | NO ! |
| L | isExcludedFromDividends | External ! | | NO ! |
| L | isExcludedFromProtection | External ! | | NO ! |
| L | setDividendExcluded | Public ! | " | onlyOwner |
| L | setExcludedFromFees | Public ! | " | onlyOwner |

```


OPTIMIZATIONS | DUST SWAP

ID	Title	Category	Status
DTV	Logarithm Refinement Optimization	Gas Optimization	Acknowledged ●
DOP	Checks Can Be Performed Earlier	Gas Optimization	Acknowledged ●
DDP	Unnecessary Use Of SafeMath	Gas Optimization	Acknowledged ●
DWY	Struct Optimization	Gas Optimization	Acknowledged ●
DGT	Unused State Variable	Gas Optimization	Acknowledged ●

General Detectors

Public Functions Should be Declared External

Some functions in this contract should be declared as external in order to save gas


Attention
Required

Missing Zero Address Validation







































Some functions in this contract may not appropriately check for zero addresses being used.


Attention
Required

Numeric Notation Best Practices

The numeric notation used in this contract is unconventional, possibly worsening the reading/debugging experience


Attention
Required

- | | |
|--|--|
|  No compiler version inconsistencies found |  No tautologies or contradictions found |
|  No unchecked call responses found |  No faulty true/false values found |
|  No vulnerable self-destruct functions found |  No innacurate divisions found |
|  No assertion vulnerabilities found |  No redundant constructor calls found |
|  No old solidity code found |  No vulnerable transfers found |
|  No external delegated calls found |  No vulnerable return values found |
|  No external call dependency found |  No uninitialized local variables found |
|  No vulnerable authentication calls found |  No default function responses found |
|  No invalid character typos found |  No missing arithmetic events found |
|  No RTL characters found |  No missing access control events found |
|  No dead code found |  No redundant true/false comparisons found |
|  No risky data allocation found |  No state variables vulnerable through function calls found |
|  No uninitialized state variables found |  No buggy low-level calls found |
|  No uninitialized storage variables found |  No expensive loops found |
|  No vulnerable initialization functions found |  No bad numeric notation practices found |
|  No risky data handling found |  No missing constant declarations found |
|  No number accuracy bug found |  No missing external function declarations found |
|  No out-of-range number vulnerability found |  No vulnerable payable functions found |
|  No map data deletion vulnerabilities found |  No vulnerable message values found |

Vulnerability Run check

Dust Swap / DUST

04/02/2024 06:15 AM UTC+8

Contract Info

Total supply 1000000000
Transaction Tax Buy 0.00% / Sell 0.00%

Holders

Holder count

0x62...c66b

Creator

OWNERSHIP NOT RENOUNCED

0x62...c66b

Owner

...

Liquidity Pool

Risk Analysis

✔ Contract source code verified

This token contract is open source. You can check the contract code for details. Unsourced token contracts are likely to have malicious functions to defraud their users of their assets.

✔ No Proxy

There is no proxy in the contract. The proxy contract means contract owner can modify the function of the token and possibly effect the price.

✔ No mint function

Mint function is transparent or non-existent. Hidden mint functions may increase the amount of tokens in circulation and effect the price of the token.

✔

No function to retrieve ownership

If this function exists, it is possible for the project owner to regain ownership even after relinquishing it.

✔ Owner cant change balance

The contract owner does not have the authority to modify the balance of tokens at other addresses.



Honeypot Risk

✔

This does not appear to be a honeypot

We are not aware of any code that prevents the sale of tokens.

✔ No trading cooldown

The token contract has no trading cooldown function. If there is a trading cooldown function, the user will not be able to sell the token within a certain time or block after buying.

✔ No Anti Whale

There is no limit to the number of token transactions. The number of scam token transactions may be limited (honeypot risk).

✔ No blacklist function

No blacklist function is included.

✔ No whitelist function

Whitelist function found

DNY-01 Key Findings

Category	Severity ●	Location	Status
Status Mathematical Operations	Low	Multiple Contracts	Informational

Description

In **updateForMinter**, the following equation is used inside an unchecked block

```
function _mint(address account, uint256 amount) internal virtual {
    require(account != address(0), "ERC20: mint to the zero address");

    _beforeTokenTransfer(address(0), account, amount);

    _totalSupply += amount;
    _balances[account] += amount;
    emit Transfer(address(0), account, amount);
}
```

Minter can not issue more **DUST SWAP** Token indefinitely.

Note that as of the date of publishing, the above review reflects the current understanding of known security patterns as they relate to the **DUST SWAP** contract.

Thus, this enables the approval of a token account for confidential transfers, even if it is associated with a different mint. Ideally, token accounts should only be allowed to hold tokens from the specific mint they are associated with. By not checking the mint consistency, the function effectively approves arbitrary token accounts for confidential transfers. Such unauthorized token mixing may have security and financial implications, as it could result in loss of value or assets for users who rely on the token system's integrity.

Recommendation

Incorporate the following verification within process approve account to confirm that the token account's associated mint aligns with the mint for which the confidential transfer approval is sought.

DNY-02 Key Findings

Category	Severity ●	Target	Status
Business Logic	Medium	token/DustToken.sol	Fixed

Description

In `updateFormapping`, the following equation is used inside an unchecked block

```
contract Dust is Context, IERC20, IERC20Metadata {
    mapping(address => uint256) private _balances;

    mapping(address => mapping(address => uint256)) private _allowances;
```

Description

The function `mapping()` does not have the override specifier. It should be noted that since (`>`) a function that overrides only a single interface function does not require the override specifier (see doc). However, all other instances of this in the code base contain the override specifier.

Recommendation

We recommend either checking for overflow in this case, or ensuring that the `PairsIn` is close enough it will never cause an overflow

LNY-03 Key Findings

Category	Severity ●	Target	Status
Inconsistency	Informational	Multiple Contracts	Acknowledge

Description

In **updateForAmount**, Relevant Function Snippet

```
function transfer(address recipient, uint256 amount)
    public
    virtual
    override
    returns (bool)
{
    _transfer(_msgSender(), recipient, amount);
    return true;
}
```

Description

The function amount0 () does not have the override specifier. It should be noted that since amount0 > a function That overrides only a single interface function does not require the override specifier. However, all other instances of this in the codebase contain the override specifier

Recommendation

We recommend adding the override specifier to amount() or removing the override specifier from all other functions this applies to for consistency.

DDL-04 Key Findings

Category	Severity ●	Target	Status
Coding Practices	low	factory/contracts/DustswapFactory.sol	Confirmed

Description

updateForBalance, Relevant Function Snippet

```
function _burn(address account, uint256 amount) internal virtual {
    require(account != address(0), "ERC20: burn from the zero address");

    _beforeTokenTransfer(account, address(0), amount);

    uint256 accountBalance = _balances[account];
    require(accountBalance >= amount, "ERC20: burn amount exceeds balance");
    _balances[account] = accountBalance - amount;
    _totalSupply -= amount;

    emit Transfer(account, address(0), amount);
}
```

Description

While re-viewing arithmetic operations in current balance implementation, we notice occasions that may introduce unexpected overflows/underflows.

For example, if we examine the `helpers::query_balance(&deps, &sender);` function, it may revert if the current `collateralData` is equal to 0. Another example is when the underlying asset of a recipient has an unusual decimal, which may revert the following calculation of `if sender == &collect_tax_wallet || recipient == &collect_tax_wallet {`

```
    assert_eq!(
```

Note this calculation appears in a number of routines. Its revert may bring in unnecessary frictions and cause issues for integration and composability.

Recommendation

Revise the above calculation to avoid the unnecessary overflows and underflows.

LNY-06 Key Findings

Category	Severity ●	Target	Status
Coding Practices	low	router/contracts/DustSwapRouter.sol	Informational

Description

In **updateForOwner**, Relevant Function Snippet

```

    */
    function _approve(
        address owner,
        address spender,
        uint256 amount
    ) internal virtual {
        require(owner != address(0), "ERC20: approve from the zero address");
        require(spender != address(0), "ERC20: approve to the zero address");

        _allowances[owner][spender] = amount;
        emit Approval(owner, spender, amount);
    }

```

Description

For Ownership efficiency, the Lenny Token is engineered with the reserve cache mechanism, which necessitates the common steps to be followed when operating with the reserve Ownership data in different scenarios, including the tax generation, update, and eventual persistence.

Recommendation

Revise the above functions to following a consistent approach to use the reserve cache mechanism.

Vulnerability Scan

REENTRANCY

✓ No reentrancy risk found

Severity

Major

Confidence Parameter

Certain

Vulnerability Description

✗ **Mintable**: More amount of the DUST SWAP token can **NOT** be minted by a private wallet or contract. (This is Essentially normal for most contracts)

Scanning Line:

```
function _mint(address account, uint256 amount) internal virtual {  
    require(account != address(0), "ERC20: mint to the zero  
address");  
  
    _beforeTokenTransfer(address(0), account, amount);  
  
    _totalSupply += amount;  
    _balances[account] += amount;  
    emit Transfer(address(0), account, amount);  
}
```

Repository:

<https://github.com/DustSwapOfficial/contract>

Audited Files

[DustswapFactory.sol](#)

[DustSwapRouter.sol](#)

[DustToken.sol](#)

Contract Creator Address

0x62CAFe1AD6A32bA04410356Eb399d4c1F947C66B

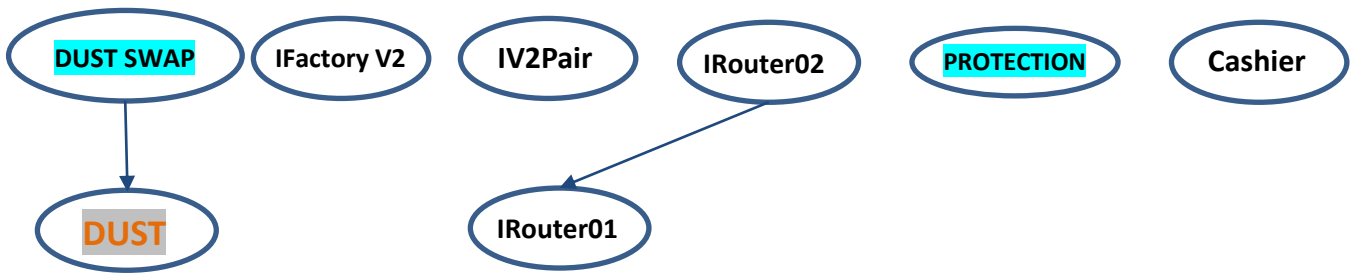
Deployed Contracts:

0x65F6045b66C47af52B94556f879Ca39A0C1F9aD3

Creator TXH Contracts:

<https://etherscan.io/tx/0xbe386270703653fcfb15bbb930513925b6758bded3d5a59a560fbf003486bcd2>

INHERITANCE GRAPH



Identifier	Definition	Severity
CEN-12	Centralization privileges of DUST SWAP	Medium # 🟡

Vulnerability 0 : No important security issue detected.

Threat level: Low

```

387  * - `recipient` cannot be the zero address.
388  * - `sender` must have a balance of at least `amount`.
389  */
390  function _transfer(
391    address sender,
392    address recipient,
393    uint256 amount
394  ) internal virtual {
395    require(sender != address(0), "ERC20: transfer from the zero address");
396    require(recipient != address(0), "ERC20: transfer to the zero address");
397    _beforeTokenTransfer(sender, recipient, amount);
398
399    uint256 senderBalance = _balances[sender];
400    require(
401      senderBalance >= amount,
402      "ERC20: transfer amount exceeds balance"
403    );
404    _balances[sender] = senderBalance - amount;
405    _balances[recipient] += amount;
406
407    emit Transfer(sender, recipient, amount);
408  }
409
410  /** @dev Creates `amount` tokens and assigns them to `account`, increasing
  
```

ISSUES CHECKING STATUS

Issue Description		Checking Status
1.	Compiler errors.	PASSED
2.	Race Conditions and reentrancy. Cross-Function Race Conditions.	PASSED
3.	Possible Delay In Data Delivery.	PASSED
4.	Oracle calls.	PASSED
5.	Front Running.	PASSED
6.	Sol Dependency.	PASSED
7.	Integer Overflow And Underflow.	PASSED
8.	DoS with Revert.	PASSED
9.	Dos With Block Gas Limit.	PASSED
10.	Methods execution permissions.	PASSED
11.	Economy Model of the contract.	PASSED
12.	The Impact Of Exchange Rate On the solidity Logic.	PASSED
13.	Private use data leaks.	PASSED
14.	Malicious Event log.	PASSED
15.	Scoping and Declarations.	PASSED
16.	Uninitialized storage pointers.	PASSED
17.	Arithmetic accuracy.	PASSED
18.	Design Logic.	PASSED
19.	Cross-Function race Conditions	PASSED
20.	Save Upon solidity contract Implementation and Usage.	PASSED
21.	Fallback Function Security	PASSED



AUDIT RESULT

PASSED

MANUAL REVIEW

Dust Swap functions as a smooth, streamlined decentralized exchange (DEX) within the Linea network. Thanks to the incorporation of zero-knowledge technology, Dust Swap paves the way for an effortless and affordable DeFi experience, backed by the robust security of Ethereum.

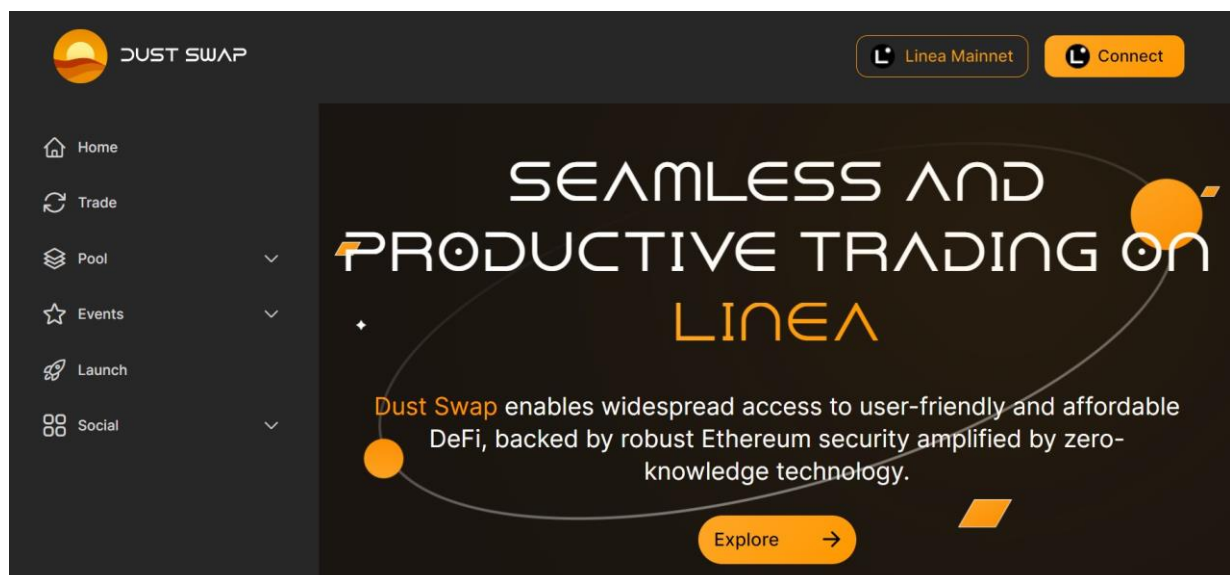
TOKEN NAME: DUST SWAP

Ticker: DUST

Total Supply: 1,000,000,000



The DUST SWAP Platform Is Launching On The LINEA Network



Identifier	Definition	Severity
CEN-02	Initial asset distribution	Minor 

All of the initially minted assets are sent to the contract deployer when deploying the contract. This is Normal for most deployer and/or contract owner .

```
function decreaseAllowance(address spender, uint256 subtractedValue)
    public
    virtual
    returns (bool)
{
    uint256 currentAllowance = _allowances[_msgSender()][spender];
    require(
        currentAllowance >= subtractedValue,
```

RECOMMENDATION

Project stakeholders should be consulted during the initial asset distribution process.

RECOMMENDATION

Deployer and/or contract owner private keys are secured carefully.

Please refer to PAGE-10 CENTRALIZED PRIVILEGES for a detailed understanding.

ALLEVIATION

The DUST SWAP project team understands the centralization risk. Some functions are provided privileged access to ensure a good runtime behavior in the project

References

- 1 MITRE. CWE-1041: Use of Redundant Code. <https://cwe.mitre.org/data/definitions/1041.html>.
- 2 MITRE. CWE-1099: Inconsistent Naming Conventions for Identifiers. <https://cwe.mitre.org/data/definitions/1099.html>.
- 3 MITRE. CWE-561: Dead Code. <https://cwe.mitre.org/data/definitions/561.html>.
- 4 MITRE. CWE-563: Assignment to Variable without Use. <https://cwe.mitre.org/data/definitions/563.html>.
- 5 MITRE. CWE-663: Use of a Non-reentrant Function in a Concurrent Context. <https://cwe.mitre.org/data/definitions/663.html>.
- 6 MITRE. CWE-837: Improper Enforcement of a Single, Unique Action. <https://cwe.mitre.org/data/definitions/837.html>.
- 7 MITRE. CWE-841: Improper Enforcement of Behavioral Workflow. <https://cwe.mitre.org/data/definitions/841.html>.
- 8 MITRE. CWE CATEGORY: Bad Coding Practices. <https://cwe.mitre.org/data/definitions/1006.html>.
- 9 MITRE. CWE CATEGORY: Business Logic Errors. <https://cwe.mitre.org/data/definitions/840.html>.
- 10 MITRE. CWE CATEGORY: Concurrency. <https://cwe.mitre.org/data/definitions/557.html>.
- 11 MITRE. CWE VIEW: Development Concepts. <https://cwe.mitre.org/data/definitions/699.html>.
- 12 OWASP. Risk Rating Methodology. https://www.owasp.org/index.php/OWASP_Risk_Rating_Methodology.

Identifier	Definition	Severity
COD-10	Third Party Dependencies	Minor 

Smart contract is interacting with third party protocols e.g., Pancakeswap router, cashier contract, protections contract. The scope of the audit treats third party entities as black boxes and assumes their functional correctness. However, in the real world, third parties can be compromised, and exploited. Moreover, upgrades in third parties can create severe impacts, e.g., increased transactional fees, deprecation of previous routers, etc.

RECOMMENDATION

Inspect and validate third party dependencies regularly, and mitigate severe impacts whenever necessary.



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The smart contract for this particular audit was analyzed for common contract vulnerabilities, and centralization exploits. This audit report makes no statements or warranties on the security of the code. This audit report does not provide any warranty or guarantee regarding the absolute bug-free nature of the smart contract analyzed, nor do they provide any indication of the client's business, business model or legal compliance. This audit report does not extend to the compiler layer, any other areas beyond the programming language, or other programming aspects that could present security risks. Cryptographic tokens are emergent technologies, they carry high levels of technical risks and uncertainty. You agree that your access and/or use, including but not limited to any services, reports, and materials, will be at your sole risk on an as-is, where-is, and as-available basis. This audit report could include false positives, false negatives, and other unpredictable results.

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