Cyberscope

Audit Report

BasedKiKong

May 2024

Network BASE

Address 0xecBC993C4B29EB5A192712D689B63A8a665a8f78

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Analysis

Critical Medium Minor / Informative Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

Diagnostics

Critical Medium Minor / Informative

Severity	Code	Description	Status
	IDI	Immutable Declaration Improvement	Unresolved
	PAMAR	Pair Address Max Amount Restriction	Unresolved
	RVD	Redundant Variable Declaration	Unresolved
	L02	State Variables could be Declared Constant	Unresolved
	L04	Conformance to Solidity Naming Conventions	Unresolved
	L09	Dead Code Elimination	Unresolved
	L11	Unnecessary Boolean equality	Unresolved
	L16	Validate Variable Setters	Unresolved
	L22	Potential Locked Ether	Unresolved

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Review

Contract Name	BasedKiKong
Compiler Version	v0.8.17+commit.8df45f5f
Optimization	200 runs
Explorer	https://basescan.org/address/0xecBC993C4B29EB5A192712D689B63A8a665a8f78
Address	0xecBC993C4B29EB5A192712D689B63A8a665a8f78
Network	BASE
Symbol	BaKiK
Decimals	18
Total Supply	100,000,000,000

Audit Updates

Initial Audit	05 May 2024

Source Files

Filename	SHA256
BasedKiKong.sol	4bc70c0ad84c8c1defd6e7bb3fef3ce3145b35510482a0fbda78049e59a9a2ac

Findings Breakdown

Critical	0
Medium	0
Minor / Informative	9

Severity	Unresolved	Acknowledged	Resolved	Other
Critical	0	0	0	0
Medium	0	0	0	0
Minor / Informative	9	0	0	0

IDI - Immutable Declaration Improvement

Criticality	Minor / Informative
Location	BasedKiKong.sol#L345,349
Status	Unresolved

Description

The contract declares state variables that their value is initialized once in the constructor and are not modified afterwards. The `immutable` is a special declaration for this kind of state variables that saves gas when it is defined.

```
BaKiK
uniswapV2Pair
```

Recommendation

By declaring a variable as immutable, the Solidity compiler is able to make certain optimizations. This can reduce the amount of storage and computation required by the contract, and make it more gas-efficient.

PAMAR - Pair Address Max Amount Restriction

Criticality	Minor / Informative
Location	BasedKiKong.sol#L389
Status	Unresolved

Description

The contract is configured to enforce a maximum token accumulation limit through checks. This mechanism aims to prevent excessive token concentration by reverting transactions that overcome the specified cap. However, this functionality encounters issues when transactions default to the pair address during transactions. If the pair address is not listed in the exceptions, then the transactions are inadvertently stopped, effectively disrupting operations and making the contract susceptible to unintended behaviors. For instance, if the team decides to transfer the majority of the token's liquidity from the V2 to the V3 pool the operation would not be able to procceed, since the pool are not listed in the exceptions mapping and cannot be added afterwards.

```
if (_isExcludedFromMaxWalletLimit[from] == false && _isExcludedFromMaxWalletLimit[to]
== false && to != uniswapV2Pair && from == uniswapV2Pair) {
    uint balance  = balanceOf(to);
    require(balance + amount <=totalSupply() * maxWalletLimit / 1000, "MaxWallet:
Recipient exceeds the maxWalletAmount");
}
```

Recommendation

It is advised to modify the contract to ensure uninterrupted operations by either permitting the pair address to exceed the established token accumulation limit or by safeguarding its status in the exception list. By recognizing and allowing these essential addresses the flexibility to hold more tokens than typical limits, the contract can maintain seamless transaction flows and uphold the liquidity and stability of the ecosystem. This modification is vital for avoiding disruptions that could impact the functionality and security of the contract.

RVD - Redundant Variable Declaration

Criticality	Minor / Informative
Location	BasedKiKong.sol#L338
Status	Unresolved

Description

There are code segments that could be optimized. A segment may be optimized so that it becomes a smaller size, consumes less memory, executes more rapidly, or performs fewer operations.

The contract declares certain variables that are not used in a meaningful way by the contract. As a result, these variables are redundant.

```
mapping(address => bool) public automatedMarketMakerPairs;
```

Recommendation

The team is advised to take these segments into consideration and rewrite them so the runtime will be more performant. That way it will improve the efficiency and performance of the source code and reduce the cost of executing it.

L02 - State Variables could be Declared Constant

Criticality	Minor / Informative
Location	BasedKiKong.sol#L334,336
Status	Unresolved

Description

State variables can be declared as constant using the constant keyword. This means that the value of the state variable cannot be changed after it has been set. Additionally, the constant variables decrease gas consumption of the corresponding transaction.

```
AD = 0x000000000000000000000000000000000000dEaD;
    mapping(addr

xWalletLimit   = 20;
    mapping(addr
```

Recommendation

Constant state variables can be useful when the contract wants to ensure that the value of a state variable cannot be changed by any function in the contract. This can be useful for storing values that are important to the contract's behavior, such as the contract's address or the maximum number of times a certain function can be called. The team is advised to add the constant keyword to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	Minor / Informative
Location	BasedKiKong.sol#L319,334,339
Status	Unresolved

Description

The Solidity style guide is a set of guidelines for writing clean and consistent Solidity code. Adhering to a style guide can help improve the readability and maintainability of the Solidity code, making it easier for others to understand and work with.

The followings are a few key points from the Solidity style guide:

1. Use camelCase for function and variable names, with the first letter in lowercase (e.g., myVariable, updateCounter).
2. Use PascalCase for contract, struct, and enum names, with the first letter in uppercase (e.g., MyContract, UserStruct, ErrorEnum).
3. Use uppercase for constant variables and enums (e.g., MAX_VALUE, ERROR_CODE).
4. Use indentation to improve readability and structure.
5. Use spaces between operators and after commas.
6. Use comments to explain the purpose and behavior of the code.
7. Keep lines short (around 120 characters) to improve readability.

```
ternal pure returns (address);

    function swa

AD = 0x000000000000000000000000000000000000dEaD;
    mapping(addr

KiK;
    event Tradin
```

Recommendation

By following the Solidity naming convention guidelines, the codebase increased the readability, maintainability, and makes it easier to work with.
Find more information on the Solidity documentation
https://docs.soliditylang.org/en/v0.8.17/style-guide.html#naming-convention.

L09 - Dead Code Elimination

Criticality	Minor / Informative
Location	BasedKiKong.sol#L268
Status	Unresolved

Description

In Solidity, dead code is code that is written in the contract, but is never executed or reached during normal contract execution. Dead code can occur for a variety of reasons, such as:

- Conditional statements that are always false.
- Functions that are never called.
- Unreachable code (e.g., code that follows a return statement).

Dead code can make a contract more difficult to understand and maintain, and can also increase the size of the contract and the cost of deploying and interacting with it.

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

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

        uint256 accountBalance = _balances[account];
...

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

        _afterTokenTransfer(account, address(0), amount);
    }

    function _ap
```

Recommendation

To avoid creating dead code, it's important to carefully consider the logic and flow of the contract and to remove any code that is not needed or that is never executed. This can help improve the clarity and efficiency of the contract.

L11 - Unnecessary Boolean equality

Criticality	Minor / Informative
Location	BasedKiKong.sol#L387
Status	Unresolved

Description

Boolean equality is unnecessary when comparing two boolean values. This is because a boolean value is either true or false, and there is no need to compare two values that are already known to be either true or false.

it's important to be aware of the types of variables and expressions that are being used in the contract's code, as this can affect the contract's behavior and performance. The comparison to boolean constants is redundant. Boolean constants can be used directly and do not need to be compared to true or false.

```
WalletLimit[from] == false && _isExcludedFromMaxWalletLimit[to] == false
&& to != uniswapV2Pair && from == uniswapV2Pair) {
            ui
```

Recommendation

Using the boolean value itself is clearer and more concise, and it is generally considered good practice to avoid unnecessary boolean equalities in Solidity code.

L16 - Validate Variable Setters

Criticality	Minor / Informative
Location	BasedKiKong.sol#L345
Status	Unresolved

Description

The contract performs operations on variables that have been configured on user-supplied input. These variables are missing of proper check for the case where a value is zero. This can lead to problems when the contract is executed, as certain actions may not be properly handled when the value is zero.

```
IUniswap
```

Recommendation

By adding the proper check, the contract will not allow the variables to be configured with zero value. This will ensure that the contract can handle all possible input values and avoid unexpected behavior or errors. Hence, it can help to prevent the contract from being exploited or operating unexpectedly.

L22 - Potential Locked Ether

Criticality	Minor / Informative
Location	BasedKiKong.sol#L361
Status	Unresolved

Description

The contract contains Ether that has been placed into a Solidity contract and is unable to be transferred. Thus, it is impossible to access the locked Ether. This may produce a financial loss for the users that have called the payable method.

```
payable {}

    function _se
```

Recommendation

The team is advised to either remove the payable method or add a withdraw functionality. it is important to carefully consider the risks and potential issues associated with locked Ether.

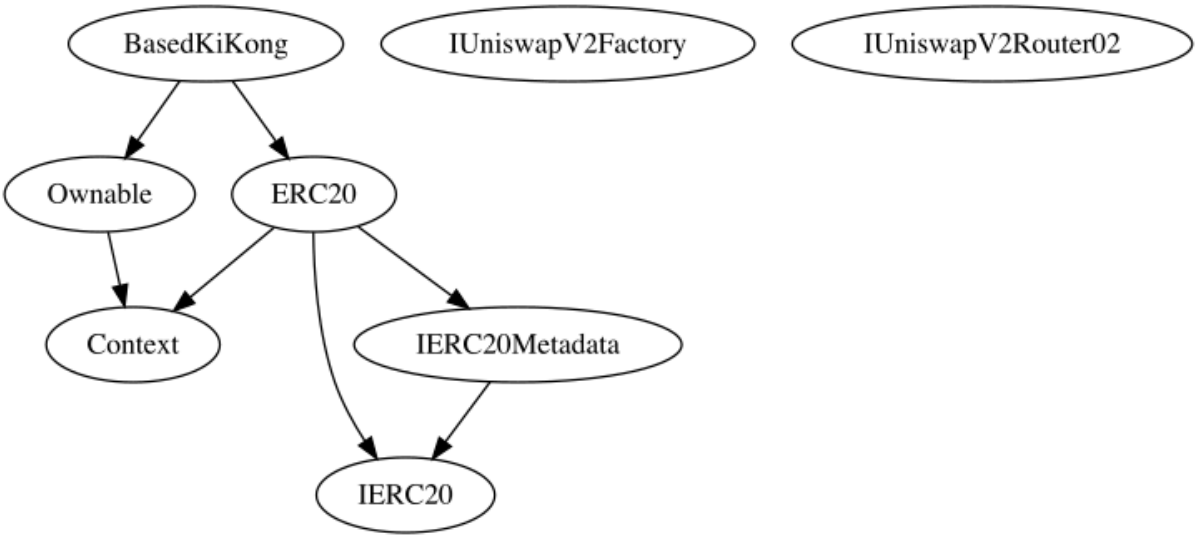
Functions Analysis

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
IERC20	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
IERC20Metadata	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
Context	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
Ownable	Implementation	Context		
		Public	✓	-

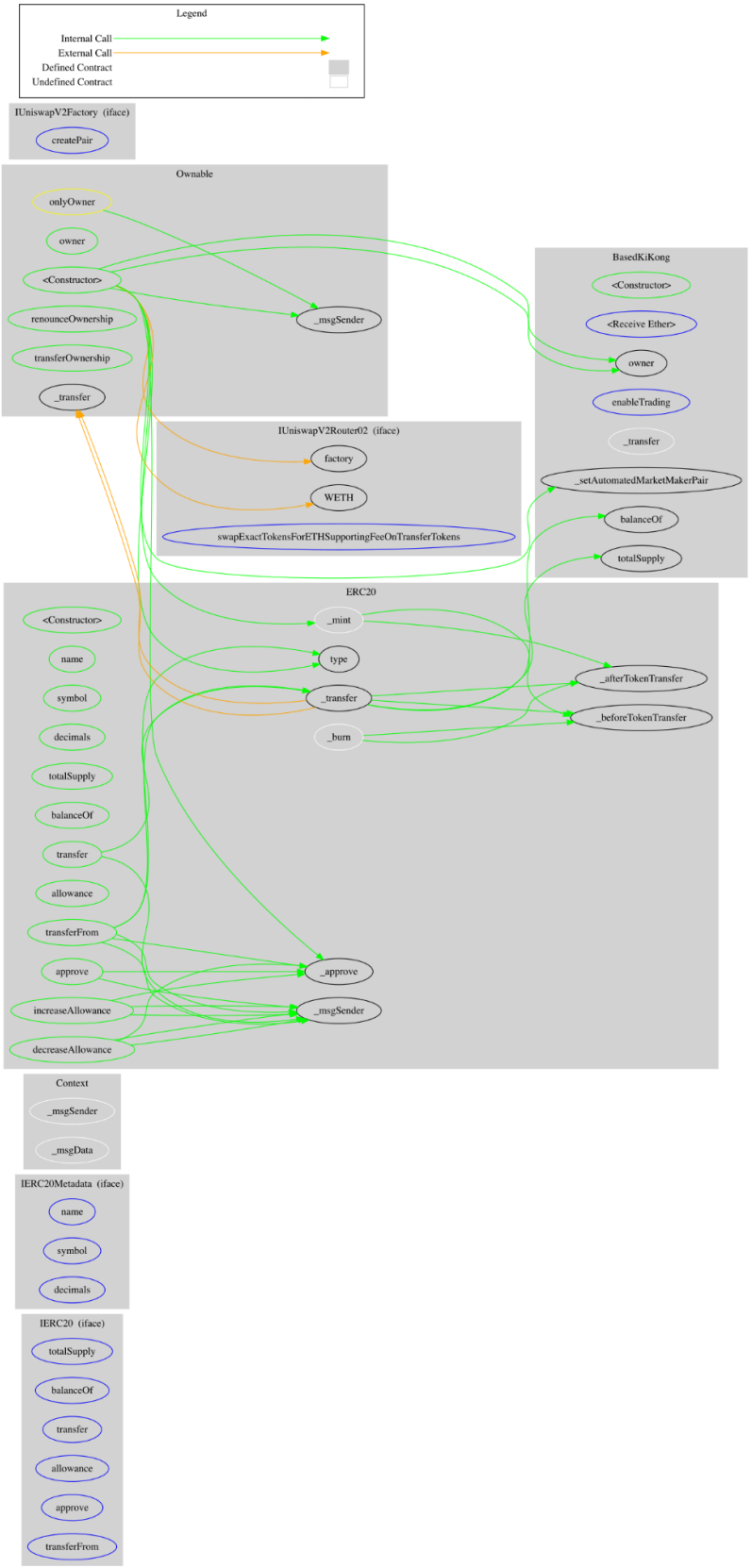
	owner	Public		-
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
ERC20	Implementation	Context, IERC20, IERC20Metadata		
		Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	
	_approve	Internal	✓	
	_beforeTokenTransfer	Internal	✓	

	_afterTokenTransfer	Internal	✓	
IUniswapV2Factory	Interface			
	createPair	External	✓	-
IUniswapV2Router02	Interface			
	factory	External		-
	WETH	External		-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
BasedKiKong	Implementation	ERC20, Ownable		
		Public	✓	ERC20
		External	Payable	-
	_setAutomatedMarketMakerPair	Private	✓	
	enableTrading	External	✓	onlyOwner
	_transfer	Internal	✓	

Inheritance Graph



Flow Graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
IUniswapV2Factory (iface)
createPair
Ownable
onlyOwner
owner
<Constructor>
renounceOwnership
transferOwnership
_transfer
_msgSender
BasedKiKong
<Constructor>
<Receive Ether>
owner
enableTrading
_transfer
_setAutomatedMarketMakerPair
balanceOf
totalSupply
IUniswapV2Router02 (iface)
factory
WETH
swapExactTokensForETHSupportingFeeOnTransferTokens
ERC20
<Constructor>
name
symbol
decimals
totalSupply
balanceOf
transfer
allowance
transferFrom
approve
increaseAllowance
decreaseAllowance
_mint
type
_transfer
_burn
_afterTokenTransfer
_beforeTokenTransfer
_approve
_msgSender
Context
_msgSender
_msgData
IERC20Metadata (iface)
name
symbol
decimals
IERC20 (iface)
totalSupply
balanceOf
transfer
allowance
approve
transferFrom

Summary

BasedKiKong contract implements a token mechanism. This audit investigates security issues, business logic concerns, and potential improvements. BasedKiKong is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler errors or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions.

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The Cyberscope team

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