



TechRate
AUDIT COMPANY

Smart Contract Security Audit

Audit Details



Audited project

Predator



Deployer address

0xC71b00ab69f86f9Ca50F77Dc385FD27703a73dc6



Client contacts:

Predator team



Blockchain

Binance Smart Chain



Project website:

<http://predatortoken.org/>

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at 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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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

Background

TechRate was commissioned by Predator to perform an audit of smart contracts:

<https://bscscan.com/address/0x29D13cAabd557619AA295AcE43Dac8863eA36817#code>

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Contracts Details

Token contract details for 05.08.2021

Contract name	Predator
Contract address	0x29D13cAabd557619AA295AcE43Dac8863eA36817
Total supply	1,000,000,000
Token ticker	PRED
Decimals	18
Token holders	1
Transactions count	1
Top 100 holders dominance	100.00%
Cooldown interval	40
Autoliquidity fee receiver	0x819b0094e0fa7048b384ad90069534102a0de77d
Marketing fee receiver	0x4edfff2c161532be431b6c1ff4ffff946ea78801
Pair	0x27fc6cd0fff070d676a37c5b7cfc85734090d5b2
Contract deployer address	0xC71b00ab69f86f9Ca50F77Dc385FD27703a73dc6
Contract's current owner address	0xc71b00ab69f86f9ca50f77dc385fd27703a73dc6

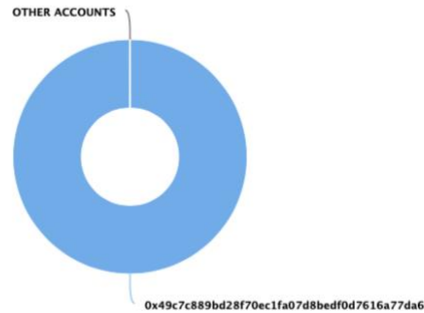
Predator Token Distribution

The top 100 holders collectively own 100.00% (1,000,000,000.00 Tokens) of Predator

Token Total Supply: 1,000,000,000.00 Token | Total Token Holders: 1

Predator Top 100 Token Holders

Source: BscScan.com



(A total of 1,000,000,000.00 tokens held by the top 100 accounts from the total supply of 1,000,000,000.00 token)

Predator Contract Interaction Details

Time Series: Token Contract Overview

Wed 4, Aug 2021 - Wed 4, Aug 2021

Token Contract 0x29D13cAabd557619AA295AcE43Dac8863eA36817 (Predator)
Source: BscScan.com



Predator Top 10 Token Holders

Rank	Address	Quantity (Token)	Percentage
1	0x49c7c889bd28f70ec1fa07d8bedf0d7616a77da6	1,000,000,000	100.0000%



Contract functions details

+ [Int] IBEP20

- [Ext] balanceOf
- [Ext] transfer #

+ Auth

- [Pub] <Constructor> #
- [Ext] authorize #
 - modifiers: onlyOwner
- [Ext] unauthorize #
 - modifiers: onlyOwner
- [Ext] transferOwnership #
 - modifiers: onlyOwner

+ [Int] IDEXFactory

- [Ext] createPair #

+ [Int] IDEXRouter

- [Ext] factory
- [Ext] addLiquidityETH (\$)
- [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens (\$)
- [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

+ DividendDistributor

- [Pub] <Constructor> #
- [Ext] setDistributionCriteria #
 - modifiers: onlyToken
- [Ext] setShare #
 - modifiers: onlyToken
- [Ext] deposit (\$)
 - modifiers: onlyToken
- [Ext] process #
 - modifiers: onlyToken
- [Int] _getCumulativeDividends
- [Int] _distributeDividend #
- [Int] _addShareholder #
- [Int] _removeShareholder #
- [Ext] claimDividend #
- [Pub] getUnpaidEarnings

+ Predator (Auth)

- [Pub] <Constructor> #
- [Ext] <Fallback> (\$)
- [Ext] getOwner
- [Pub] approve #
- [Ext] approveMax #
- [Ext] transfer #
- [Ext] transferFrom #
- [Int] _transferFrom #
- [Int] _basicTransfer #
- [Int] _sellAndDistributeAccumulatedTKNFee #
 - modifiers: swapping

- [Int] _sellBNB #
 - modifiers: swapping
- [Pub] getTransferFee
- [Pub] getCirculatingSupply
- [Pub] getLiquidityBacking
- [Ext] clearBuybackMultiplier #
 - modifiers: authorized
- [Ext] setBuybackSimple #
 - modifiers: authorized
- [Ext] setTxLimit #
 - modifiers: authorized
- [Ext] setLsDividendExempt #
 - modifiers: onlyOwner
- [Ext] setLsFeeExempt #
 - modifiers: onlyOwner
- [Ext] setLsTxLimitExempt #
 - modifiers: onlyOwner
- [Ext] setLsTimelockExempt #
 - modifiers: onlyOwner
- [Ext] triggerZeusBuyback #
 - modifiers: authorized
- [Ext] setFees #
 - modifiers: authorized
- [Ext] setAutoBuybackSettings #
 - modifiers: authorized
- [Ext] setSwapBackSettings #
 - modifiers: authorized
- [Ext] setFeeReceivers #
 - modifiers: authorized
- [Ext] setTargetLiquidity #
 - modifiers: authorized
- [Ext] setDistributionCriteria #
 - modifiers: authorized
- [Ext] setDistributorSettings #
 - modifiers: authorized
- [Ext] setTradingStatus #
 - modifiers: onlyOwner
- [Ext] setCooldownEnabled #
 - modifiers: onlyOwner
- [Ext] makeItRain #
 - modifiers: onlyOwner

(\$) = payable function

= non-constant function

Issues Checking Status

Issue description		Checking status
1.	Compiler errors.	Passed
2.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3.	Possible delays in data delivery.	Passed
4.	Oracle calls.	Passed
5.	Front running.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow.	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Low issues
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	The impact of the exchange rate on the logic.	Passed
13.	Private user 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.	Safe Open Zeppelin contracts implementation and usage.	Passed
21.	Fallback function security.	Passed

Security Issues

✓ High Severity Issues

No high severity issues found.

✓ Medium Severity Issues

No medium severity issues found.

✓ Low Severity Issues

1. Out of gas

Issue:

- The function `makeItRain()` uses the loop to airdrop rewards by the list. Function will be aborted with `OUT_OF_GAS` exception if there will be a long receivers list.

```
function makeItRain(  
    address from↑,  
    address[] calldata addresses↑,  
    uint256[] calldata tokens↑  
) external onlyOwner {  
    uint256 showerCapacity = 0;  
    require(  
        addresses↑.length == tokens↑.length,  
        "Mismatch between Address and token count"  
    );  
    for (uint256 i = 0; i < addresses↑.length; i++)  
        showerCapacity += tokens↑[i];  
    require(  
        balanceOf[msg.sender] >= showerCapacity,  
        "Not enough tokens to airdrop"  
    );  
    for (uint256 i = 0; i < addresses↑.length; i++)  
        _basicTransfer(from↑, addresses↑[i], tokens↑[i]);  
}
```

Recommendation:

Check that the arrays length is not too big.

Owner privileges (In the period when the owner is not renounced)

- Authorized addresses can nullify buyback triggeredAt value.
- Authorized addresses can disable and enable buyback simple value.
- Authorized addresses can change max transaction amount.
- Authorized addresses can call triggerZeusBuyback.
- Authorized addresses can change fees and fee settings.
- Authorized addresses can change auto buyback and swap buyback settings.
- Authorized addresses can change fee receivers.
- Authorized addresses can change target liquidity value.
- Authorized addresses can change distribution criteria.
- Authorized addresses can change distribution GAS.
- Owner can authorize addresses.
- Owner can exclude from dividends.
- Owner can exclude from fee.
- Owner can exclude from TX limit.
- Owner can exclude from timelock.
- Owner can enable and disable trading.
- Owner can change cooldown settings.

Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope.

Liquidity locking details NOT provided by the team.

TechRate note:

Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.



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