Coinsult

Advanced Manual Smart Contract Audit

Project: Aretis

Website: https://aretis.io/

Low-Risk	Medium-Risk	High-Risk
5 low-risk code issues found	0 medium-risk code issues found	0 high-risk code issues found

Contract Address

0x5326fCDf8ae618db847D1C6689A848b6D393763D testnet

Disclaimer

Coinsult is not responsible if a project turns out to be a scam, rug-pull or honeypot. We only provide a detailed analysis for your own research.

Coinsult is not responsible for any financial losses. Nothing in this contract audit is financial advice, please do your own research.

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Tokenomics

Testnet

Source Code

Coinsult was comissioned by Aretis to perform an audit based on the following smart contract:

https://testnet.bscscan.com/address/0x5326fCDf8ae618db847D1C6689A848b6D393763D

Testnet Contract

Manual Code Review

In this audit report we will highlight all these issues:

Low-Risk

5 low-risk code
issues found

Medium-Risk

0 medium-risk code
issues found

High-Risk

0 high-risk code
issues found

The detailed report continues on the next page...

🟢 **Low-Risk:** Could be fixed, will not bring problems.

Contract contains Reentrancy vulnerabilities

Additional information: This combination increases risk of malicious intent. While it may be justified by some complex mechanics (e.g. rebase, reflections, buyback).

More information: Slither

```
function _transferFrom(
    address sender,
    address recipient,
    uint256 amount
) internal returns (bool) {
    require(!blacklist[sender] &amp;amp;&amp;amp; !blacklist[recipient], 'in-blacklist');

    if (inSwap) {
        return _basicTransfer(sender, recipient, amount);
    }
    if (shouldRebase()) {
        rebase();
    }

    if (shouldAddLiquidity()) {
        addLiquidity();
    }

    if (shouldSwapBack()) {
        swapBack();
    }
```

Recommendation

Apply the check-effects-interactions pattern.

Exploit scenario

```
function withdrawBalance(){
    // send userBalance[msg.sender] Ether to msg.sender
    // if mgs.sender is a contract, it will call its fallback function
    if( ! (msg.sender.call.value(userBalance[msg.sender])() ) ){
        throw;
    }
    userBalance[msg.sender] = 0;
}
```

Bob uses the re-entrancy bug to call withdrawBalance two times, and withdraw more than its initial deposit to the contract.

🟢 **Low-Risk:** Could be fixed, will not bring problems.

Avoid relying on block.timestamp

block.timestamp can be manipulated by miners.

```
if (recipient == pair || sender == pair) {
    //sell token
    require(startTradingTime &gt; 0 &amp;&amp; block.timestamp &gt;= startTradingTime, 'can not trad
    if (block.timestamp &lt;= startTradingTime + 6) {
        _totalFee = _totalFee.add(_robotsFee);
        _gonBalances[autoLiquidityReceiver] = _gonBalances[autoLiquidityReceiver].add(
            gonAmount.div(feeDenominator).mul(_robotsFee)
        );
    }
}
```

Recommendation

Do not use `block.timestamp`, now or `blockhash` as a source of randomness

Exploit scenario

```
contract Game {

    uint reward_determining_number;

    function guessing() external{
      reward_determining_number = uint256(block.blockhash(10000)) % 10;
    }
}
```

Eve is a miner. Eve calls `guessing` and re-orders the block containing the transaction. As a result, Eve wins the game.

🟢 **Low-Risk:** Could be fixed, will not bring problems.

Missing events arithmetic

Detect missing events for critical arithmetic parameters.

```
function setStartTradingTime(uint256 _time) public onlyOwner {
    startTradingTime = _time;
    if (_time &gt; 0) {
        _lastAddLiquidityTime = _time;
        if (_lastRebasedTime == 0) {
            _lastRebasedTime = _time;
        }
    }
}
```

Recommendation

Emit an event for critical parameter changes.

Exploit scenario

```
contract C {

  modifier onlyAdmin {
    if (msg.sender != owner) throw;
    _;
  }

  function updateOwner(address newOwner) onlyAdmin external {
    owner = newOwner;
  }
}
```

`updateOwner()` has no event, so it is difficult to track off-chain changes in the buy price.

🟢 **Low-Risk:** Could be fixed, will not bring problems.

Boolean equality

Detects the comparison to boolean constants.

```
if (recipient == pair &amp;&amp; _isFeeExempt[sender] == false &amp;&amp; _isFeeExempt[recipient] ==
    //only can sell 99% of balance
    if (gonAmount &gt;= _gonBalances[sender].div(1000).mul(999)) {
        gonAmount = _gonBalances[sender].div(1000).mul(999);
    }
    //require(gonAmount&lt;=_gonBalances[sender].mul(99).div(100),&quot;only can sell 99% of balance
}
```

Recommendation

Remove the equality to the boolean constant.

Exploit scenario

```
contract A {
    function f(bool x) public {
        // ...
        if (x == true) { // bad!
           // ...
        }
        // ...
    }
}
```

Boolean constants can be used directly and do not need to be compare to `true` or `false`.

🟢 **Low-Risk:** Could be fixed, will not bring problems.

Conformance to Solidity naming conventions

Allow _ at the beginning of the mixed_case match for private variables and unused parameters.

```
uint256 private TOTAL_GONS;

uint256 private constant MAX_SUPPLY = ~uint128(0) / 1e14;
```

Recommendation

Follow the Solidity naming convention.

Rule exceptions

- Allow constant variable name/symbol/decimals to be lowercase (`ERC20`).
- Allow _ at the beginning of the `mixed_case` match for private variables and unused parameters.

Owner privileges

- Owner cannot set fees higher than 25%
- Owner cannot pause trading
- Owner cannot change max transaction amount
- Owner can exclude from fees
- Owner can blacklist addresses

Extra notes by the team

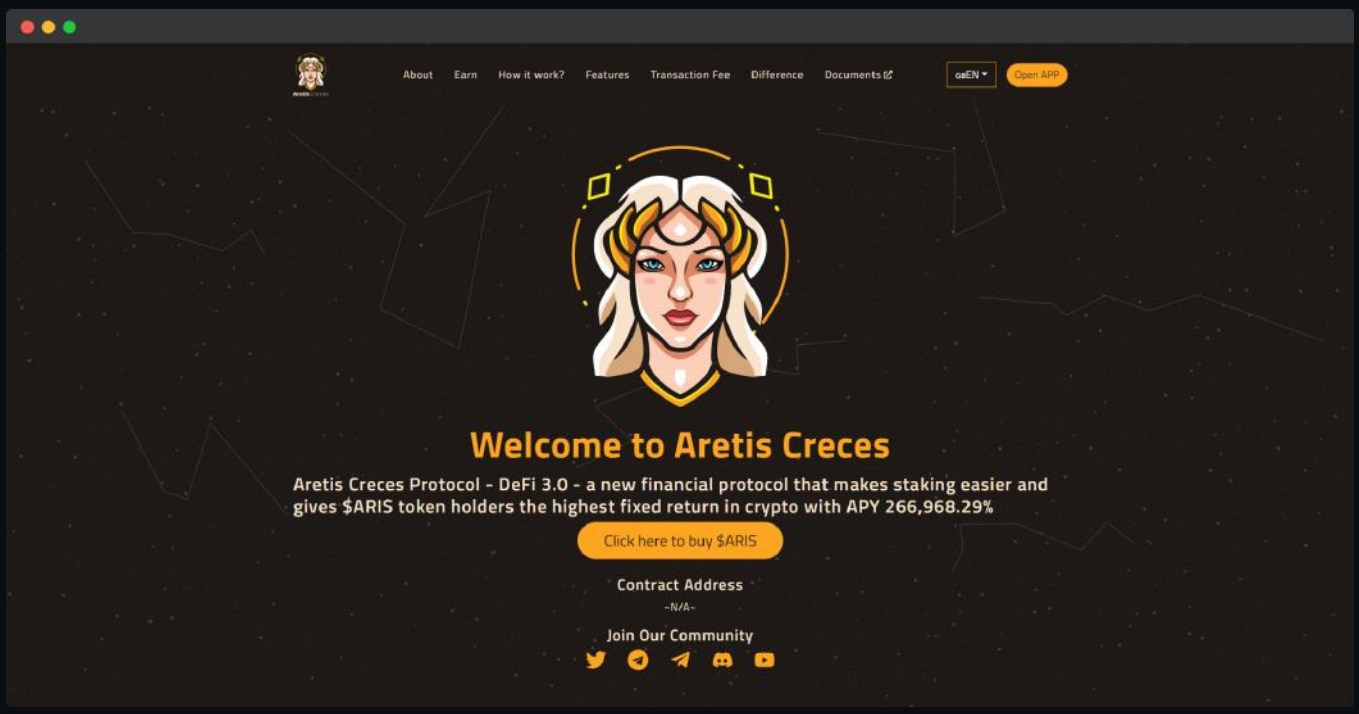
No notes

Contract Snapshot

```
contract Aretis is ERC20Detailed, Ownable {
using SafeMath for uint256;
using SafeMathInt for int256;

event LogRebase(uint256 indexed epoch, uint256 totalSupply);
event LogRefferal(address indexed from, address indexed to, uint256 amount);

string public _name = 'Aretis Creces Protocol';
string public _symbol = 'ARIS';
uint8 public _decimals = 8;

mapping(address =&gt; bool) _isFeeExempt;

modifier validRecipient(address to) {
    require(to != address(0x0));
    _;
}

uint256 public constant DECIMALS = 8;
uint256 public constant MAX_UINT256 = ~uint256(0);
uint8 public constant RATE_DECIMALS = 8;

uint256 public liquidityFee = 20; //2%  only for buy
uint256 public treasuryFee = 50; //5% only for sell
uint256 public antiRiskFundFee = 30; //3% only for sell
uint256 public daoFee = 60; //6% only for sell
uint256 public firePitFee = 20; //2% only for sell
uint256 public inviteFee = 100; //10% only for buy
uint256 public feeDenominator = 1000;
uint256 public totalInviteAmount = 0;

address DEAD = 0x000000000000000000000000000000000000dEaD;
address ZERO = 0x0000000000000000000000000000000000000000;

address public autoLiquidityReceiver;
address public treasuryReceiver;
address public firePit;
```

Website Review

Coinsult checks the website completely manually and looks for visual, technical and textual errors. We also look at the security, speed and accessibility of the website. In short, a complete check to see if the website meets the current standard of the web development industry.



- Mobile Friendly
- Does not contain jQuery errors
- SSL Secured
- No major spelling errors

Project Overview

Not KYC verified by Coinsult

Aretis

Audited by Coinsult.net

Date: 26 June 2022

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