



Advanced Manual Smart Contract Audit



Project: Aretis

Website: <https://aretis.io/>

● Low-Risk

5 low-risk code
issues found

● Medium-Risk

0 medium-risk code
issues found

● High-Risk

0 high-risk code
issues found

Contract Address

0x5326fCDf8ae618db847D1C6689A848b6D393763D testnet

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

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CHZHOB 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.

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Tokenomics

Testnet

Source Code

CHZHOB was commissioned by Aretis to perform an audit based on the following smart contract:

[https:// testnet.bscscan.com/address/0x5326fCDf8ae618db847D1C6689A848b6D393763](https://testnet.bscscan.com/address/0x5326fCDf8ae618db847D1C6689A848b6D393763)

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] && !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 msg.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 > 0 && block.timestamp >= startTradingTime, 'can not trad
    if (block.timestamp <= 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 > 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 && _isFeeExempt[sender] == false && _isFeeExempt[recipient] ==  
    //only can sell 99% of balance  
    if (gonAmount >= _gonBalances[sender].div(1000).mul(999)) {  
        gonAmount = _gonBalances[sender].div(1000).mul(999);  
    }  
    //require(gonAmount<=_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 => 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;

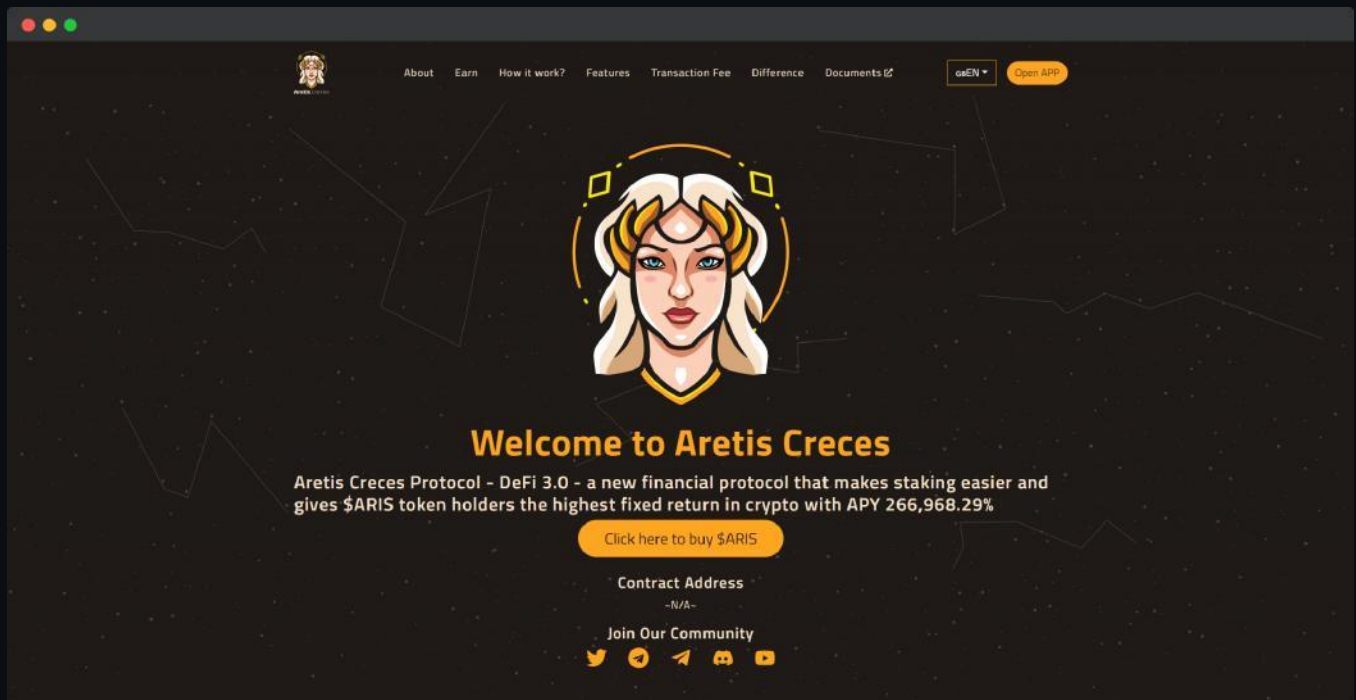
    address DEAD = 0x00000000000000000000000000000000dEaD;
    address ZERO = 0x0000000000000000000000000000000000000000;

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

```

Website Review

chzhob 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 er

Audit Review

- Verified
- correction
- Secured

