METATRUST

Draft
Security Assessment for

Hack-20210603-PancakeHunny (1OK-FLP)

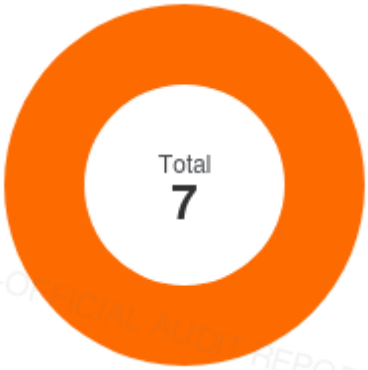
July 23, 2023

Executive Summary

Overview	
Project Name	Hack-20210603-PancakeHunny (1OK-FLP)
Codebase URL	-
Scan Engine	AI Analyzer
Scan Time	2023/07/23 15:15:49
Commit Id	-

Total	
Critical Issues	0
High risk Issues	7
Medium risk Issues	0
Low risk Issues	0
Informational Issues	0

Critical Issues	The issue can cause large economic losses, large-scale data disorder, loss of control of authority management, failure of key functions, or indirectly affect the correct operation of other smart contracts interacting with it.
High Risk Issues	The issue puts a large number of users' sensitive information at risk or is reasonably likely to lead to catastrophic impacts on clients' reputations or serious financial implications for clients and users.
Medium Risk Issues	The issue puts a subset of users' sensitive information at risk, would be detrimental to the client's reputation if exploited, or is reasonably likely to lead to moderate financial impact.
Low Risk Issues	The risk is relatively small and could not be exploited on a recurring basis, or is a risk that the client has indicated is low-impact in view of the client's business circumstances.
Informational Issue	The issue does not pose an immediate risk but is relevant to security best practices or Defence in Depth.



Critical Issues	0%	0
High risk Issues	100%	7
Medium risk Issues	0%	0
Low risk Issues	0%	0
Informational Issues	0%	0

Summary of Findings

MetaScan security assessment was performed on **July 23, 2023 15:15:49** on project **Hack-20210603-PancakeHunny (1OK-FLP)** with the repository **Hack_20210603_PancakeHunny** on branch **default branch**. The assessment was carried out by scanning the project's codebase using the scan engine **AI Analyzer**. There are in total **7** vulnerabilities / security risks discovered during the scanning session, among which **0** critical vulnerabilities, **7** high risk vulnerabilities, **0** medium risk vulnerabilities, **0** low risk vulnerabilities, **0** informational issues.

ID	Description	Severity
MSA-001	MWE-200: Insecure LP Token Value Calculation	High risk
MSA-002	MWE-200: Insecure LP Token Value Calculation	High risk
MSA-003	MWE-200: Insecure LP Token Value Calculation	High risk
MSA-004	MWE-200: Insecure LP Token Value Calculation	High risk
MSA-005	MWE-200: Insecure LP Token Value Calculation	High risk
MSA-006	MWE-200: Insecure LP Token Value Calculation	High risk
MSA-007	MWE-200: Insecure LP Token Value Calculation	High risk

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Findings

Critical (0)

No Critical vulnerabilities found here

High risk (7)

1. MWE-200: Insecure LP Token Value Calculation

High risk Security Analyzer

Liquidity token value/price can be manipulated to cause flashloan attacks.

File(s) Affected

HunnyMinter.sol #1882-1886

```
1882    function getReserves(address factory, address tokenA, address tokenB) internal view returns (uint
1883        (address token0,) = sortTokens(tokenA, tokenB);
1884        (uint reserve0, uint reserve1,) = IUniswapV2Pair(pairFor(factory, tokenA, tokenB)).getReserve
1885        (reserveA, reserveB) = tokenA == token0 ? (reserve0, reserve1) : (reserve1, reserve0);
1886    }
```

HunnyMinter.sol #3191-3203

```
3191    function unsafeTokenPriceInBNB(address _token) private view returns(uint) {
3192        address pair = factory.getPair(_token, address(WBNB));
3193        uint decimal = uint(BEP20(_token).decimals());
3194
3195        (uint reserve0, uint reserve1, ) = IPancakePair(pair).getReserves();
3196        if (IPancakePair(pair).token0() == _token) {
3197            return reserve1.mul(10**decimal).div(reserve0);
3198        } else if (IPancakePair(pair).token1() == _token) {
3199            return reserve0.mul(10**decimal).div(reserve1);
3200        } else {
3201            return 0;
3202        }
3203    }
```

Recommendation

Do not use AMM pool or custom liquidity calculation to caculate LP token value/price.

2. MWE-200: Insecure LP Token Value Calculation

High risk Security Analyzer

Liquidity token value/price can be manipulated to cause flashloan attacks.

File(s) Affected

HunnyMinter.sol #2715-2729

```
2715    function generateFlipToken() private returns(uint liquidity) {
2716        uint amountADesired = IBEP20(_hunny).balanceOf(address(this));
2717        uint amountBDesired = IBEP20(_wbnb).balanceOf(address(this));
2718
2719        IBEP20(_hunny).safeApprove(address(ROUTER), 0);
2720        IBEP20(_hunny).safeApprove(address(ROUTER), amountADesired);
2721        IBEP20(_wbnb).safeApprove(address(ROUTER), 0);
2722        IBEP20(_wbnb).safeApprove(address(ROUTER), amountBDesired);
2723
2724        (,,liquidity) = ROUTER.addLiquidity(_hunny, _wbnb, amountADesired, amountBDesired, 0, 0, addr
2725
2726        // send dust
2727        IBEP20(_hunny).transfer(msg.sender, IBEP20(_hunny).balanceOf(address(this)));
2728        IBEP20(_wbnb).transfer(msg.sender, IBEP20(_wbnb).balanceOf(address(this)));
2729    }
```

Recommendation

Do not use AMM pool or custom liquidity calculation to caculate LP token value/price.

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3. MWE-200: Insecure LP Token Value Calculation

High risk Security Analyzer

Liquidity token value/price can be manipulated to cause flashloan attacks.

File(s) Affected

HunnyMinter.sol #3243-3247

```
3243    function _apy(uint pid) view private returns(uint) {
3244        (address token,,,) = master.poolInfo(pid);
3245        uint poolSize = tvl(token, IBEP20(token).balanceOf(address(master))).mul(1e18).div(bnbPriceIn
3246        return cakePriceInBNB().mul(cakePerYearOfPool(pid)).div(poolSize);
3247    }
```

HunnyMinter.sol #3305-3316

```
3305    function compoundingAPY(uint pid, uint compoundUnit) view public returns(uint) {
3306        uint __apy = _apy(pid);
3307        uint compoundTimes = 365 days / compoundUnit;
3308        uint unitAPY = 1e18 + (__apy / compoundTimes);
3309        uint result = 1e18;
3310
3311        for(uint i=0; i<compoundTimes; i++) {
3312            result = (result * unitAPY) / 1e18;
3313        }
3314
3315        return result - 1e18;
3316    }
```

Recommendation

Do not use AMM pool or custom liquidity calculation to caculate LP token value/price.

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4. MWE-200: Insecure LP Token Value Calculation

High risk Security Analyzer

Liquidity token value/price can be manipulated to cause flashloan attacks.

File(s) Affected

HunnyMinter.sol #3255-3279

```
3255    function tvl(address _flip, uint amount) public view returns (uint) {
3256        if (_flip == address(CAKE)) {
3257            return cakePriceInBNB().mul(bnbPriceInUSD()).mul(amount).div(1e36);
3258        }
3259        address _token0 = IPancakePair(_flip).token0();
3260        address _token1 = IPancakePair(_flip).token1();
3261
3262        // using hunny price from the oracle
3263        if (_token0 == address(hunny) || _token1 == address(hunny)) {
3264            uint hunnyBalance = hunny.balanceOf(address(_flip)).mul(amount).div(IBEP20(_flip).totalSu
3265            uint priceInBNB = tokenPriceInBNB(address(hunny));
3266            uint price = priceInBNB.mul(bnbPriceInUSD()).div(1e18);
3267            return hunnyBalance.mul(price).div(1e18).mul(2);
3268        }
3269
3270        if (_token0 == address(WBNB) || _token1 == address(WBNB)) {
3271            uint bnb = WBNB.balanceOf(address(_flip)).mul(amount).div(IBEP20(_flip).totalSupply());
3272            uint price = bnbPriceInUSD();
3273            return bnb.mul(price).div(1e18).mul(2);
3274        }
3275
3276        uint balanceToken0 = IBEP20(_token0).balanceOf(_flip);
3277        uint price = tokenPriceInBNB(_token0);
3278        return balanceToken0.mul(price).div(1e18).mul(bnbPriceInUSD()).div(1e18).mul(2);
3279    }
```

Recommendation

Do not use AMM pool or custom liquidity calculation to caculate LP token value/price.

5. MWE-200: Insecure LP Token Value Calculation

High risk Security Analyzer

Liquidity token value/price can be manipulated to cause flashloan attacks.

File(s) Affected

HunnyMinter.sol #3281-3303

```
3281      function tvlInBNB(address _flip, uint amount) public view returns (uint) {
3282          if (_flip == address(CAKE)) {
3283              return cakePriceInBNB().mul(amount).div(1e18);
3284          }
3285          address _token0 = IPancakePair(_flip).token0();
3286          address _token1 = IPancakePair(_flip).token1();
3287
3288          // using hunny price from the oracle
3289          if (_token0 == address(hunny) || _token1 == address(hunny)) {
3290              uint hunnyBalance = hunny.balanceOf(address(_flip)).mul(amount).div(IBEP20(_flip).totalSu
3291              uint priceInBNB = tokenPriceInBNB(address(hunny));
3292              return hunnyBalance.mul(priceInBNB).div(1e18).mul(2);
3293          }
3294
3295          if (_token0 == address(WBNB) || _token1 == address(WBNB)) {
3296              uint bnb = WBNB.balanceOf(address(_flip)).mul(amount).div(IBEP20(_flip).totalSupply());
3297              return bnb.mul(2);
3298          }
3299
3300          uint balanceToken0 = IBEP20(_token0).balanceOf(_flip);
3301          uint price = tokenPriceInBNB(_token0);
3302          return balanceToken0.mul(price).div(1e18).mul(2);
3303      }
```

Recommendation

Do not use AMM pool or custom liquidity calculation to caculate LP token value/price.

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6. MWE-200: Insecure LP Token Value Calculation

High risk Security Analyzer

Liquidity token value/price can be manipulated to cause flashloan attacks.

File(s) Affected

HunnyMinter.sol #3763-3777

```
3763     function apy() override public view returns(uint _usd, uint _hunny, uint _bnb) {
3764         uint tokenDecimals = 1e18;
3765         uint __totalSupply = _totalSupply;
3766         if (__totalSupply == 0) {
3767             __totalSupply = tokenDecimals;
3768         }
3769
3770         uint rewardPerTokenPerSecond = rewardRate.mul(tokenDecimals).div(__totalSupply);
3771         uint hunnyPrice = helper.tokenPriceInBNB(address(stakingToken));
3772         uint flipPrice = helper.tvlInBNB(address(rewardsToken), 1e18);
3773
3774         _usd = 0;
3775         _hunny = 0;
3776         _bnb = rewardPerTokenPerSecond.mul(365 days).mul(flipPrice).div(hunnyPrice);
3777     }
```

Recommendation

Do not use AMM pool or custom liquidity calculation to caculate LP token value/price.

7. MWE-200: Insecure LP Token Value Calculation

High risk | Security Analyzer

Liquidity token value/price can be manipulated to cause flashloan attacks.

File(s) Affected

HunnyMinter.sol #4523-4531

```
4523    function tvl() override public view returns (uint) {
4524        uint stakingTVL = helper.tvl(address(stakingToken), _totalSupply);
4525
4526        uint price = rewardsToken.priceShare();
4527        uint earned = rewardsToken.balanceOf(address(this)).mul(price).div(1e18);
4528        uint rewardTVL = helper.tvl(CAKE, earned);
4529
4530        return stakingTVL.add(rewardTVL);
4531    }
```

HunnyMinter.sol #3229-3240

```
3229    function profitOf(address minter, address flip, uint amount) external view returns (uint _usd, ui
3230        _usd = tvl(flip, amount);
3231        if (address(minter) == address(0)) {
3232            _hunny = 0;
3233        } else {
3234            uint performanceFee = IHunnyMinter(minter).performanceFee(_usd);
3235            _usd = _usd.sub(performanceFee);
3236            uint bnbAmount = performanceFee.mul(1e18).div(bnbPriceInUSD());
3237            _hunny = IHunnyMinter(minter).amountHunnyToMint(bnbAmount);
3238        }
3239        _bnb = 0;
3240    }
```

Recommendation

Do not use AMM pool or custom liquidity calculation to caculate LP token value/price.

Medium risk (0)

No Medium risk vulnerabilities found here

Low risk (0)

No Low risk vulnerabilities found here

Informational (0)

No Informational vulnerabilities found here

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