

Draft Security Assessment for

98-2022-03-rolla (1Positive-FLP)

July 23, 2023



Informational

Issues

Executive Summary

Overview		
Project Name	98-2022-03-rolla (1Positive-FLP)	
Codebase URL	https://github.com/code-423n4/2022- 03-rolla	
Scan Engine	Al Analyzer	
Scan Time	2023/07/23 23:35:00	
Commit Id	a06418c	

Total		∧,
Critical Issues	DIAL AUDIT REF	0
High risk Issues		ORT 1
Medium risk Issues		0
Low risk Issues		0

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.





Summary of Findings

MetaScan security assessment was performed on **July 23, 2023 23:35:00** on project **98-2022-03-rolla (1Positive-FLP)** with the repository **https://github.com/code-423n4/2022-03-rolla** on branch **default branch**. The assessment was carried out by scanning the project's codebase using the scan engine **Al Analyzer**. There are in total **1** vulnerabilities / security risks discovered during the scanning session, among which **0** critical vulnerabilities, **1** 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





Findings



Critical (0)

No Critical vulnerabilities found here

FICIAL AUDIT REPORT 4 High risk (1)



1. MWE-200: Insecure LP Token Value Calculation

4 High risk



Security Analyzer

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

File	(s)	Affected

File(s) A...
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quant-protocol/contracts/QuantCalculator.sol #61-163

```
function calculateClaimableCollateral(
           uint256 _collateralTokenId,
          uint256 _amount,
           address _msgSender
           external
           view
           override
           returns (
             uint256 returnableCollateral,
              address collateralAsset,
              uint256 amountToClaim
           ICollateralToken collateralToken = IOptionsFactory(optionsFactory)
              .collateralToken();
           (address _qTokenShort, address qTokenAsCollateral) = collateralToken
                                                            CIAL AUDIT REPORT
            .idToInfo(_collateralTokenId);
           require(
              _qTokenShort != address(0),
               "Can not claim collateral from non-existing option"
           );
           IQToken qTokenShort = IQToken(_qTokenShort);
           require(
              block.timestamp > qTokenShort.expiryTime(),
               "Can not claim collateral from options before their expiry"
           );
           require(
               qTokenShort.getOptionPriceStatus() == PriceStatus.SETTLED,
               "Can not claim collateral before option is settled"
          );
           amountToClaim = _amount == 0
              ? collateralToken.balanceOf(_msgSender, _collateralTokenId)
              : _amount;
            IQuantConfig quantConfig = IOptionsFactory(optionsFactory)
                                                NON-OFFICIAL AUDIT
                .quantConfig();
            IPriceRegistry priceRegistry = IPriceRegistry(
                quantConfig.protocolAddresses(ProtocolValue.encode("priceRegistry"))
            );
            IPriceRegistry.PriceWithDecimals memory expiryPrice = priceRegistry
              .getSettlementPriceWithDecimals(
                   qTokenShort.oracle(),
                   qTokenShort.underlyingAsset(),
                   qTokenShort.expiryTime()
                                               NON-OFFICIAL AUDIT REPOR
                );
address qTokenLong;
            QuantMath.FixedPointInt memory payoutFromLong;
```



```
if (qTokenAsCollateral != address(0)) {
                qTokenLong = qTokenAsCollateral;
                 (, payoutFromLong) = FundsCalculator.getPayout(
                    qTokenLong,
                    amountToClaim,
                    OPTIONS_DECIMALS,
                                                NON-OFFICIAL AUDIT REPORT
                    strikeAssetDecimals,
126N-OFFICIA);
                    expiryPrice
            } else {
                qTokenLong = address(0);
                payoutFromLong = int256(0).fromUnscaledInt();
            uint8 payoutDecimals = OptionsUtils.getPayoutDecimals(
              strikeAssetDecimals,
                gTokenShort,
                quantConfig
            );
138 QuantMath.FixedPointInt memory collateralRequirement;
            QuantMath.FixedPointInt memory corracerance...

(collateralAsset, collateralRequirement) = FundsCalculator
                    _qTokenShort,
                    qTokenLong,
                    amountToClaim,
                    OPTIONS_DECIMALS,
                    payoutDecimals,
                    strikeAssetDecimals
                );
            (, QuantMath.FixedPointInt memory payoutFromShort) = FundsCalculator
                                                            FICIAL AUDIT REPORT
         .getPayout(
                   _qTokenShort,
                    amountToClaim,
                    OPTIONS_DECIMALS,
                    strikeAssetDecimals,
                    expiryPrice
                );
            returnableCollateral = payoutFromLong
                .add(collaterance)
.sub(payoutFromShort)
.toScaledUint(payoutDecimals, true);
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```

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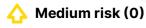


quant-protocol/contracts/Controller.sol #369-407

```
function _claimCollateral(uint256 _collateralTokenId, uint256 _amount)
   internal
   uint256 collateralTokenId = _collateralTokenId;
   // Use the QuantCalculator to check how much collateral the sender/signer is due.
       uint256 returnableCollateral,
address collateralAsset,
       uint256 amountToClaim
   ) = IQuantCalculator(quantCalculator).calculateClaimableCollateral(
          collateralTokenId,
           _amount,
           msgSender()
       );
   // Burn the short tokens
   IOptionsFactory(optionsFactory).collateralToken().burnCollateralToken(
       _msgSender(),
       collateralTokenId,
  C// amountToClaim
   // Transfer any collateral due after expiration
   if (returnableCollateral > 0) {
       IERC20(collateralAsset).safeTransfer(
           msgSender().
           returnableCollateral
       );
   }
   emit CollateralClaimed(
  _msgSender(),
       collateralTokenId,
       amountToClaim,
      returnableCollateral,
       collateralAsset
   );
```

Recommendation

Do not use AMM pool or custom liquidity calculation to caculate LP token value/price. NON-OFFICIAL AUDIT REPORT



No Medium risk vulnerabilities found here

Low risk (0)

No Low risk vulnerabilities found here NON-OFFICIAL ALL





? Informational (0)

No Informational vulnerabilities found here



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