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KYC & AUDIT.

Novos is an agency specializing in blockchain technology solutions, Audits, KYC / Doxx.

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CERTIFICATE OF COMPLIANCE

Smart Contract Audit by NOVOS

BigpadFactory

Audit Passed

August 23, 2022

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Table of Contents

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Audit Summary

This report has been prepared for BigpadFactory on the BSC network. Novos provides both client-centered and user-centered examination of the smart contracts and their current status when applicable. This report represents the security assessment made to find issues and vulnerabilities on the source code along with the current liquidity and token holder statistics of the protocol.

A comprehensive examination has been performed, utilizing Cross Referencing, Static Analysis, In-House Security Tools, and line-by-line Manual Review.

The auditing process pays special attention to the following considerations:

- Ensuring contract logic meets the specifications and intentions of the client without exposing the user's funds to risk.
- Testing the smart contracts against both common and uncommon attack vectors.
- Inspecting liquidity and holders statistics to inform the current status to both users and client when applicable.
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Verifying contract functions that allow trusted and/or untrusted actors to mint, lock, pause, and transfer assets.
- Thorough line-by-line manual review of the entire codebase by industry experts.

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Project Overview

Parameter	Result
Address	0x9123C482c33A58BeBC2Eb5D8bC72d2D01a4beB04
Contract Name	BigpadFactory
Token Tracker	-
Decimals	-
Supply	-
Platform	BSC
Compiler	v0.6.12+commit.27d51765
Optimization	No with 200 runs
Other Settings:	default evmVersion '/ MIT license
Language	Solidity
Codebase	https://bscscan.com/address/0x9123C482c33A58BeBC2Eb5D8bC72d2D01a4beB04#code
Url	https://www.bigpadsale.com/

Main Contract Assessed

Name	Contract	Live
BigpadFactory	0x9123C482c33A58BeBC2Eb5D8bC72d2D01a4beB04	Yes

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Smart Contract Vulnerability Checks

Vulnerability	Automatic Scan	Manual Scan	Result
❖ Unencrypted Private Data On-Chain	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Code With No Effects	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Message call with hardcoded gas amount	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Hash Collisions With Multiple Variable Length Arguments	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Unexpected Ether balance	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Presence of unused variables	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Right-To-Left-Override control character (U+202E)	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Typographical Error	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ DoS With Block Gas Limit	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Arbitrary Jump with Function Type Variable	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Insufficient Gas Griefing	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Incorrect Inheritance Order	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Write to Arbitrary Storage Location	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Requirement Violation	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Missing Protection against Signature Replay Attacks	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Weak Sources of Randomness from Chain Attributes	✓ Complete	✓ Complete	✓ **Low / No Risk**



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Smart Contract Vulnerability Checks

Vulnerability	Automatic Scan	Manual Scan	Result
❖ Authorization through tx.origin	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Delegatecall to Untrusted Callee	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Use of Deprecated Solidity Functions	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Assert Violation	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Reentrancy	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Unprotected SELFDESTRUCT Instruction	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Unprotected Ether Withdrawal	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Unchecked Call Return Value	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Outdated Compiler Version	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Integer Overflow and Underflow	✓ Complete	✓ Complete	✓ **Low / No Risk**
❖ Function Default Visibility	✓ Complete	✓ Complete	✓ **Low / No Risk**



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Contract Ownership

The contract ownership of BigpadFactory is not currently renounced. The ownership of the contract grants special powers to the protocol creators, making them the sole addresses that can call sensible ownable functions that may alter the state of the protocol.
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01

The current owner is the address 0xdb725f04c4a0834391c5ec2f8598e12a92e8e55f which can be viewed from: HERE

02

The owner wallet has the power to call the functions displayed on the priviliged functions chart below, if the owner wallet is compromised this privileges could be exploited.

03

We recommend the team to renounce ownership at the right timing if possible, or gradually migrate to a timelock with governing functionalities in respect of transparency and safety considerations.

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Important Notes To The Users:

01 Returns true if `account` is a contract. It is unsafe to assume that an address for which this function returns * false is an externally-owned account (EOA) and not a contract.

02 Function isContract (address account) internal view returns (bool) { This method relies on extcodesize, which returns 0 for contracts in construction, since the code is only stored at the end of the constructor execution.

03 Replacement for Solidity's `transfer`: sends `amount` wei to `recipient`, forwarding all available gas and reverting on errors. https://eips.ethereum.org/EIPS/eip-1884[EIP1884] increases the gas cost of certain opcodes, possibly making contracts go over the 2300 gas limit imposed by `transfer`, making them unable to receive funds via `transfer`. {sendValue} removes this limitation.

04 Performs a Solidity function call using a low level `call`. A plain`call` is an unsafe replacement for a function call: use this function instead. If `target` reverts with a revert reason, it is bubbled up by this function (like regular Solidity function calls). Returns the raw returned data. To convert to the expected return value

05 This contract is only required for intermediate, library-like contracts.

06 By default, the owner account will be the one that deploys the contract. This * can later be changed with {transferOwnership}.

07 A token holder contract that will allow a beneficiary to extract the tokens after a given release time. Useful for simple vesting schedules like "advisors get all of their tokens * after 1 year".

08 Compiler specific version warnings:

The compiled contract might be susceptible to AbiReencodingHeadOverflowWithStaticArrayCleanup (medium-severity), DirtyBytesArrayToStorage (low-severity), DataLocationChangeInInternalOverride (very low-severity), NestedCallataArrayAbiReencodingSizeValidation (very low-severity), SignedImmutables (very low-severity), ABIDecodeTwoDimensionalArrayMemory (very low-severity), EmptyByteArrayCopy (medium-severity), DynamicArrayCleanup (medium-severity) Solidity Compiler Bugs.

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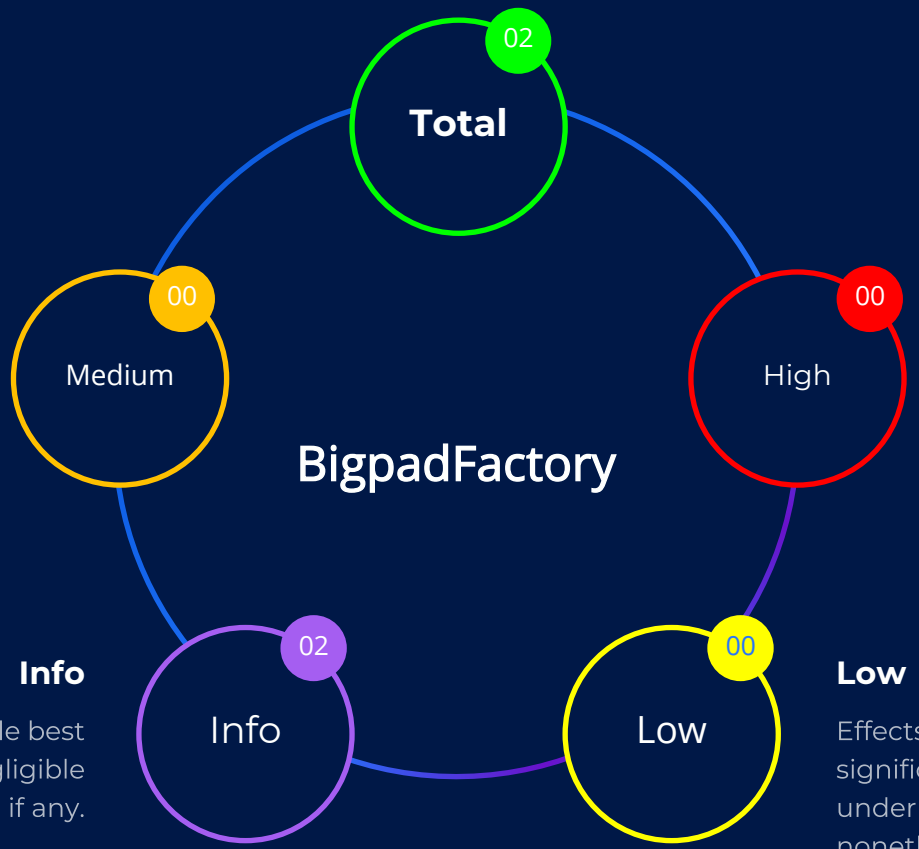
Technical Findings Summary

Classification of Issues

Total

What you should pay attention to



Medium

Bugs or issues with that may be subject to exploit, though their impact is somewhat limited. Issues under this classification are recommended to be fixed as soon as possible.

High

Exploits, vulnerabilities or errors that will certainly or probabilistically lead towards loss of funds, control, or impairment of the contract and its functions. Issues under this classification are recommended to be fixed with utmost urgency

Info

Consistency, syntax or style best practices. Generally pose a negligible level of risk, if any.

Low

Effects are minimal in isolation and do not pose a significant danger to the project or its users. Issues under this classification are recommended to be fixed nonetheless.

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Findings

Public function that could be declared external

ID	Severity	Contract	Function
01	Informational	BigpadFactory	Functions: size, getKeyAtIndex, getIndexOfKey

Description

Gas Optimization. Public function that could be declared external

Recommendation

Public functions that are never called by the contract should be declared external to save gas.

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Findings

Missing events arithmetic

ID	Severity	Contract	Function
02	Informational	BigpadFactory	Missing events for setWalletBalance, setMaxBuyTransaction, setMaxSellTransaction, setSwapTokensAtAmount, setSellTransactionMultiplier

Description

Functions that change critical arithmetic parameters should emit an event.

Recommendation

Emit corresponding events for critical parameter changes.

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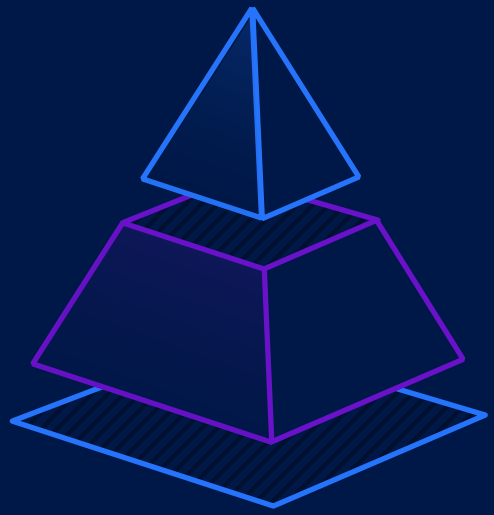
Contract BigpadLaunchpad - using SafeMath for uint256

BigpadLaunchpad.sol

- address payable internal bigpadFactoryAddress; // address that creates the presale contracts
- address payable public bigpadDevAddress; // address where dev fees will be transferred to
- address public bigpadLiqLockAddress; // address where LP tokens will be locked
- IERC20 public token; // token that will be sold
- address payable public presaleCreatorAddress; // address where percentage of invested wei will be transferred to
- address public unsoldTokensDumpAddress; // address where unsold tokens will be transferred to
- mapping(address => uint256) public investments; // total wei invested per address
- mapping(address => bool) public whitelistedAddresses; // addresses eligible in presale
- mapping(address => bool) public claimed; // if true, it means investor already claimed the tokens or got a refund
- uint256 private bigpadDevFeePercentage; // dev fee to support the development of bigpad Investments
- uint256 public bigpadId; // used for fetching presale without referencing its address
- uint256 public totalInvestorsCount; // total investors count
- uint256 public presaleCreatorClaimWei; // wei to transfer to presale creator per investor claim
- uint256 public presaleCreatorClaimTime; // time when presale creator can collect funds raise
- uint256 public totalCollectedWei; // total wei collected
- uint256 public totalTokens; // total tokens to be sold
- uint256 public tokensLeft; // available tokens to be sold
- uint256 public tokenPriceInWei; // token presale wei price per 1 token
- uint256 public hardCapInWei; // maximum wei amount that can be invested in presale
- uint256 public softCapInWei; // minimum wei amount to invest in presale, if not met, invested wei will be returned



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Priviliged Functions (onlyOwner & Others)

Function Name	Parameters	Visibility
✓ renounceOwnership	▪ none	▪ **external**
✓ transferOwnership	▪ address newOwner	▪ **public**
✓ prepareForPartherOrExchang eListing	▪ address_partnerOrExchangeAddress	▪ **external**
✓ setWalletBalance	▪ uint256 _maxWalletBalance	▪ **external**
✓ setMaxBuyTransaction	▪ uint256 _maxTxn	▪ **external**
✓ setMaxSellTransaction	▪ uint256 _maxTxn	▪ **external**
✓ updateBusdDividendToken	▪ address _newContract	▪ **external**
✓ updateMarketingWallet	▪ address _newWallet	▪ **external**
✓ setSwapTokensAtAmount	▪ uint256 _swapAmount	▪ **external**
✓ setSellTransactionMultiplier	▪ uint256 _multiplier	▪ **external**
✓ setTradingIsEnabled	▪ none	▪ **external**
✓ setBusdDividendEnabled	▪ bool _enabled	▪ **external**
✓ setMarketingEnabled	▪ bool _enabled	▪ **external**
✓ setSwapAndLiquifyEnabled	▪ bool _enabled	▪ **external**
✓ updatebusdDividendTracker	▪ address newAddress	▪ **external**
✓ updateUniswapV2Router	▪ address newAddress	▪ **external**

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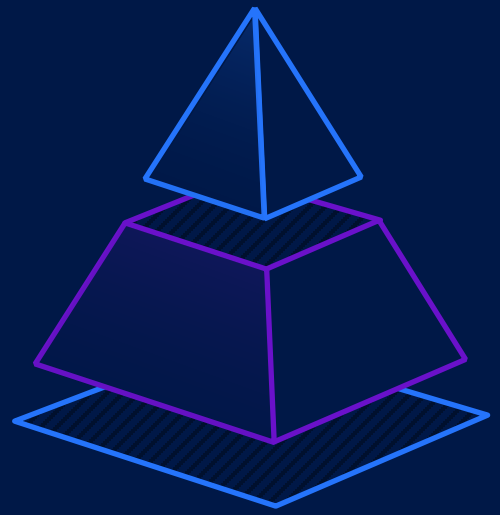
Priviliged Functions (onlyOwner & Others)

Function Name	Parameters	Visibility
✓ excludeFromFees	▪ address account, bool excluded	▪ **public**
✓ excludeFromDividend	▪ address account	▪ **public**
✓ setAutomatedMarketMakerP air	▪ address pair, bool value	▪ **external**
✓ updateGasForProcessing	▪ uint256 newValue	▪ **external**
✓ updateMinimumBalanceForDi vidends	▪ uint256 newMinimumBalance	▪ **external**
✓ updateClaimWait	▪ uint256 claimWait	▪ **external**
✓ processDividendTracker	▪ uint256 gas	▪ **external**



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