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Swapz BEP20 Token Audit V1

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Version: 1
Date: Oct 12 2021

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1. Project Information

1.1 Project Scope

We were tasked with auditing the Swapz smart contract platform. This audit process pertains to the Swapz BEP20 Token provided to us by the Swapz development team on October 1st, 2021. The files within scope of this audit are:

File	MD5
./contracts/Swapz.sol	9eb2237072d821178f08347f363281fa

And can be found here

We modularized the code into separate contracts to ease the testing of the code.

1.2 Issue Classification

Informational

This issue relates to style and security best practices but does not pose an immediate risk.

Low

An issue classified as informational does not pose an immediate threat to disruption of functionality and could not be exploited on a recurring basis, however, it should be considered for security best practices or code integrity.

Medium

An issue classified as medium has relatively small risk and isn't exploitable to circumvent desired functionality and could not have financial consequences but could put user's sensitive information at risk.

Critical

These issues in the smart contract can have catastrophic implications that could ruin your reputation, disrupt the contract's functionality, and impact the client and your user's sensitive information.

2. Process Details

2.1 Analysis

This audit is a review of security best practices of the SWAPZ BEP20 contract. The contract was shared with us at the following bscscan url.

The SWAPZ token inherits from BEP20.sol , LGEWhitelisted, Ownable.sol, SafeMath.sol, IBEP20.sol, and Context.sol.

As part of our auditing process we tested and verified the behavior of the $SWAPZ BEP20 and antibot whitelisting smart contracts. Through the process we found:

0	0	0	0
Critical Issues	Medium Issues	Low Issues	Informational Issues

After testing the full codebase, we found that functions **_burn()** and **_burnFrom()** are not exposed and as such cannot be used. The rest of code was utitlized in the codebase and was able to be tested.

2..2 Auditing Process

This section describes the auditing process that was followed to test the SWAPZ BEP20 Token. We deployed a local instance of the Uniswap V2 protocal, and WETH9 in order to simulate the pairing address between $SWAPZ and $WETH. After setting up the development environment, we deployed $SWAPZ contract and used a set of simulated exernally owned accounts to verify the functional integrity of the smart contract functions.

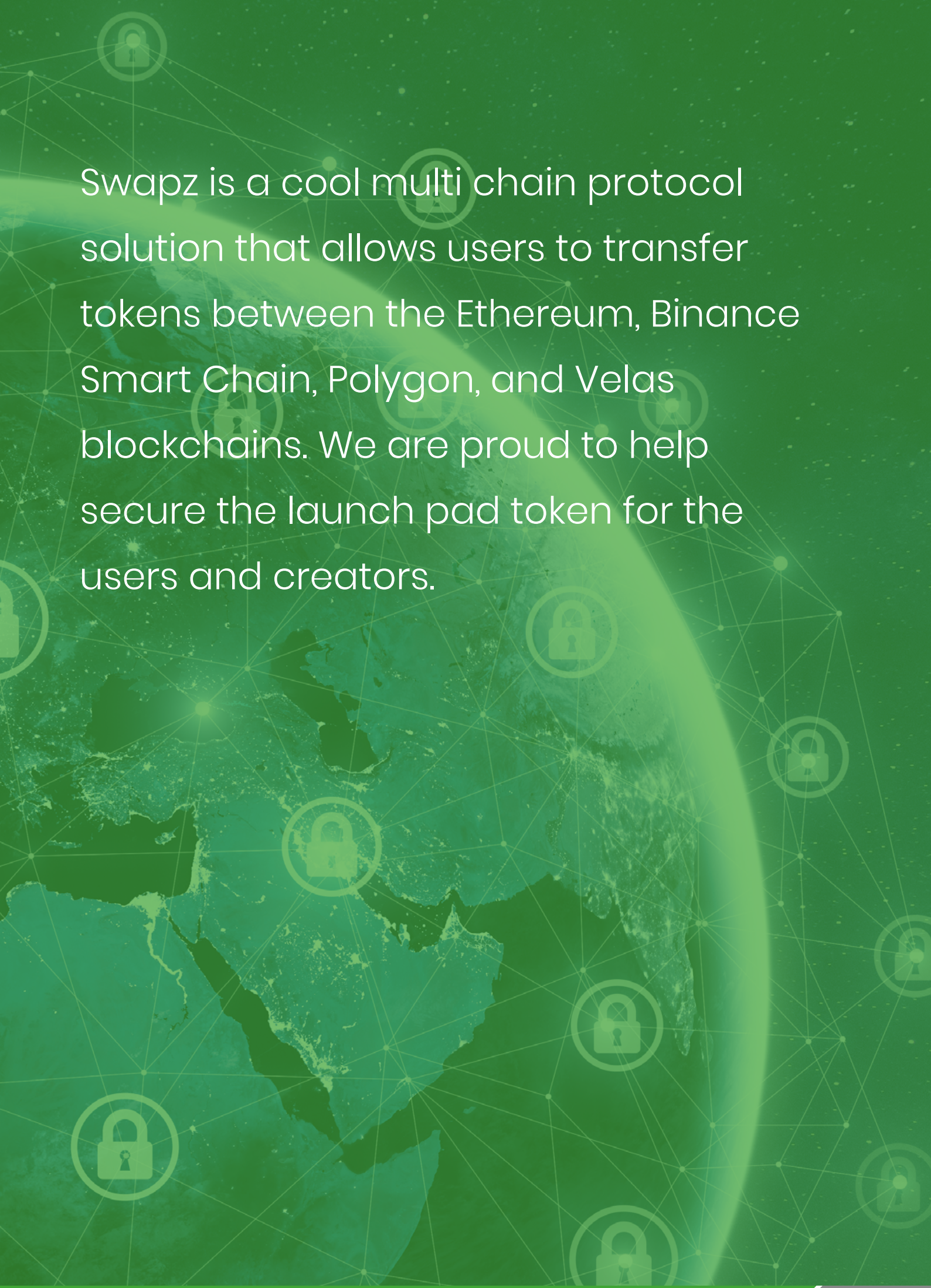
A custom test suite was designed in order to thoroughly test the requirements, specifications, and functionality of SWAPZ. The results of the test are detailed below in section 2.3.

2.3 Test Results

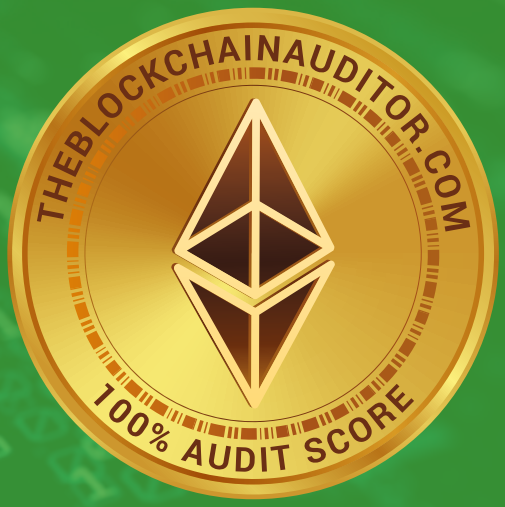
```
Swapz Test Suite
  Deployment
    √ should be called SWAPZ.app
    √ should have the symbol SWAPZ
    √ should have a cap of 1 billion tokens
    √ should have 18 decimals
    √ should have a total supply of 10 Million
    √ should mint 100,000,000 tokens to the owner account
    √ should have deployer as owner
  BEP20 functions
    √ should be able to transfer tokens
    allowance
      √ behavior of allowances (113ms)
    transferFrom behaviors
      √ allows you transfer an address' tokens to another address (48ms)
    Ownership
      √ only the owner can transfer ownership to another address
      √ owner cannot transfer ownership to the zero address
      √ the owner can renounce ownership of the contract
  Whitelist
    √ creating the LGE whitelist can only be called by the owner
    √ creating the LGE whitelist with amounts and durations not having same length will revert
    √ creating the LGE whielist requires duration and amounts to have same length
    √ adding liquidity to the pair begins LGE
    √ transferring tokens reverts if you're not on the whitelist (51ms)
    √ whitelisted addresses can buy up to the specified max (41ms)
    √ whitelist admin can add whitelist addresses using modifyLGEWhitelist
    √ whitelist admin can modify the whitelist duration
    √ whitelist admin can modify the max tokens that can be bought during the whitelist
    √ whitelist admin can call the modifyLGEWhitelist and not change anything
    √ when the whitelist round is over, getLGEWhitelistRound returns 0
    √ whitelist admin can renounce their whitelister permissions
    √ whitelist admin can tranfer their whitelisting permission to another address
    √ whitelist admin cannot transfer their whitelisting permission to the zero address


  27 passing (3s)

----------------------|----------|----------|----------|----------|----------------|
File                  |  % Stmts | % Branch |  % Funcs |  % Lines |Uncovered Lines |
----------------------|----------|----------|----------|----------|----------------|
 contracts\           |    92.78 |       72 |    93.94 |    92.93 |                |
  BEP20.sol           |    84.44 |    41.67 |       90 |    84.44 |... 283,318,319 |
  LGEWhitelisted.sol  |      100 |    82.35 |      100 |      100 |                |
  SWAPZ.sol           |      100 |       75 |      100 |      100 |                |
----------------------|----------|----------|----------|----------|----------------|
All files             |    92.78 |       72 |    93.94 |    92.93 |                |
----------------------|----------|----------|----------|----------|----------------|
```



Swapz is a cool multi chain protocol solution that allows users to transfer tokens between the Ethereum, Binance Smart Chain, Polygon, and Velas blockchains. We are proud to help secure the launch pad token for the users and creators.



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