



# CFG NINJA AUDITS

Security Assessment

**ChainSwitch Token**

June 2, 2023

Audit Status: Pass

Audit Edition: Advance

**chainswitch**












POWERED BY  
**BLADE POOL**

# Risk Analysis

















## Classifications of Manual Risk Results

Classification	Description
 Critical	Danger or Potential Problems.
 Major	Be Careful or Fail test.
 Minor	Pass, Not-Detected or Safe Item.
 Informational	Function Detected

## Manual Code Review Risk Results

Contract Priviledge	Description
 Buy Tax	6
 Sale Tax	6
 Cannot Sale	Pass
 Cannot Sale	Pass
 Max Tax	6
 Modify Tax	Not Detected
 Fee Check	Pass
 Is Honeypot?	Not Detected
 Trading Cooldown	Not Detected
 Can Pause Trade?	Pass
 Pause Transfer?	Not Detected



Contract Priviledge	Description
 Max Tx?	Pass
 Is Anti Whale?	Not Detected
 Is Anti Bot?	Not Detected
 Is Blacklist?	Not Detected
 Blacklist Check	Pass
 is Whitelist?	Detected
 Can Mint?	Pass
 Is Proxy?	Not Detected
 Can Take Ownership?	Not Detected
 Hidden Owner?	Not Detected
 Owner	0x5E855c1FdBfe57992BAA012BE453EB52C3675963
 Self Destruct?	Not Detected
 External Call?	Detected
 Other?	Not Detected
 Holders	1
 Auditor Confidence	Medium

The following quick summary it's added to the project overview; however, there are more details about the audit and its results. Please read every detail.



# Project Overview

## Token Summary

Parameter	Result
Address	0x36FEca97a4E81F4e1260119fae0C572A98832285
Name	ChainSwitch
Token Tracker	ChainSwitch (SWTCH)
Decimals	18
Supply	10,000,000
Platform	Ethereum
compiler	v0.8.19+commit.7dd6d404
Contract Name	ChainSwitch
Optimization	Yes with 200 runs
LicenseType	MIT
Language	Solidity
Codebase	<a href="https://etherscan.io/address/0x36feca97a4e81f4e1260119fae0c572a98832285#code">https://etherscan.io/address/0x36feca97a4e81f4e1260119fae0c572a98832285#code</a>
Payment Tx	Corporate



## Main Contract Assessed Contract Name

Name	Contract	Live
ChainSwitch	0x36FEca97a4E81F4e1260119fae0C572A98832285	Yes

## TestNet Contract Assessed Contract Name

Name	Contract	Live
ChainSwitch	0xA45088FfC798E372Ed94b3FcD881330c9dD10D8f	Yes

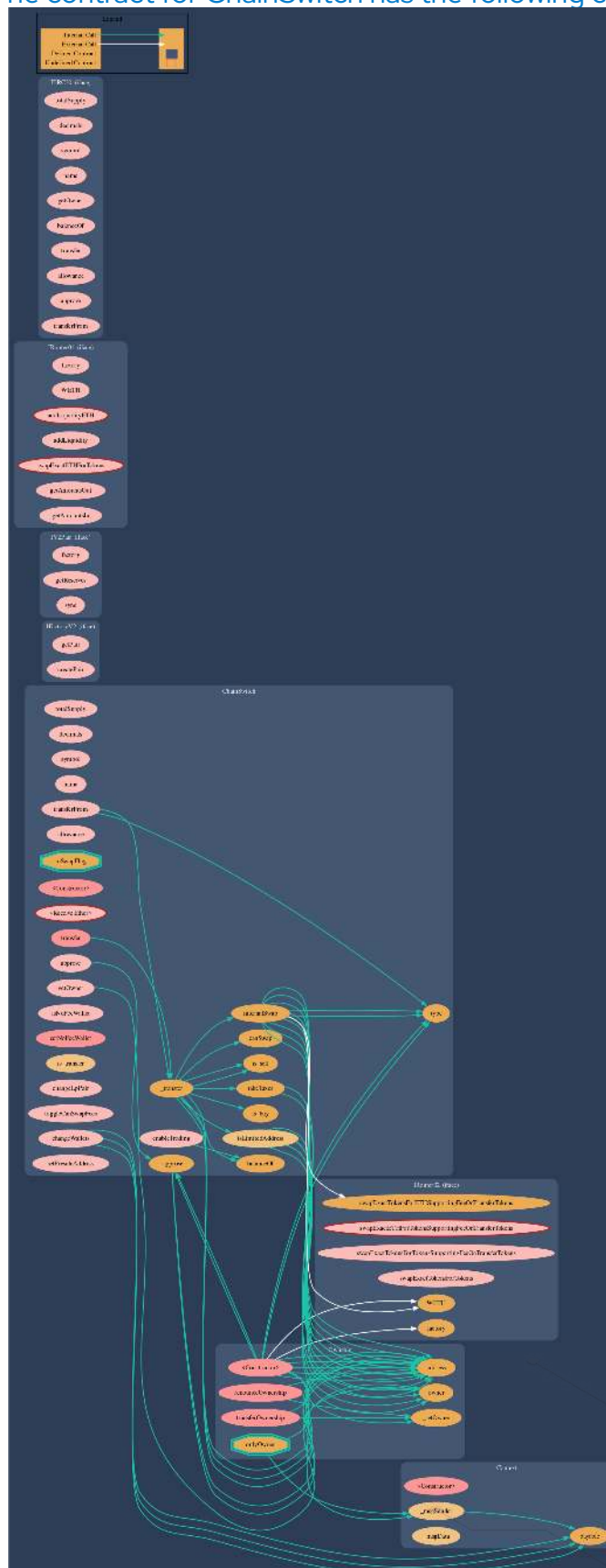
## Solidity Code Provided

SolID	File Sha-1	FileName
ChainSwitch	5d795aef730a82db49c862073363aca17e215c6d	ChainSwitch.sol
ChainSwitch		
ChainSwitch		
ChainSwitch		



# Call Graph

The contract for ChainSwitch has the following call graph structure.



# Smart Contract Vulnerability Checks

The Smart Contract Weakness Classification Registry (SWC Registry) is an implementation of the weakness classification scheme proposed in EIP-1470. It is loosely aligned to the terminologies and structure used in the Common Weakness Enumeration (CWE) while overlaying a wide range of weakness variants that are specific to smart contracts.

ID	Severity	Name	File	location
SWC-100	Pass	Function Default Visibility	ChainSwitch.sol	L: 0 C: 0
SWC-101	Pass	Integer Overflow and Underflow.	ChainSwitch.sol	L: 0 C: 0
SWC-102	Pass	Outdated Compiler Version file.	ChainSwitch.sol	L: 0 C: 0
SWC-103	Pass	A floating pragma is set.	ChainSwitch.sol	L: 0 C: 0
SWC-104	Pass	Unchecked Call Return Value.	ChainSwitch.sol	L: 0 C: 0
SWC-105	Pass	Unprotected Ether Withdrawal.	ChainSwitch.sol	L: 0 C: 0
SWC-106	Pass	Unprotected SELFDESTRUCT Instruction	ChainSwitch.sol	L: 0 C: 0
SWC-107	Pass	Read of persistent state following external call.	ChainSwitch.sol	L: 0 C: 0
SWC-108	Low	State variable visibility is not set..	ChainSwitch.sol	L: 186 C: 9
SWC-109	Pass	Uninitialized Storage Pointer.	ChainSwitch.sol	L: 0 C: 0
SWC-110	Pass	Assert Violation.	ChainSwitch.sol	L: 0 C: 0





ID	Severity	Name	File	location
SWC-111	Pass	Use of Deprecated Solidity Functions.	ChainSwitch.sol	L: 0 C: 0
SWC-112	Pass	Delegate Call to Untrusted Callee.	ChainSwitch.sol	L: 0 C: 0
SWC-113	Pass	Multiple calls are executed in the same transaction.	ChainSwitch.sol	L: 0 C: 0
SWC-114	Pass	Transaction Order Dependence.	ChainSwitch.sol	L: 0 C: 0
SWC-115	Low	Authorization through tx.origin.	ChainSwitch.sol	L: 268 C: 33
SWC-116	Pass	A control flow decision is made based on The block.timestamp environment variable.	ChainSwitch.sol	L: 0 C: 0
SWC-117	Pass	Signature Malleability.	ChainSwitch.sol	L: 0 C: 0
SWC-118	Pass	Incorrect Constructor Name.	ChainSwitch.sol	L: 0 C: 0
SWC-119	Pass	Shadowing State Variables.	ChainSwitch.sol	L: 0 C: 0
SWC-120	Pass	Potential use of block.number as source of randonmness.	ChainSwitch.sol	L: 0 C: 0
SWC-121	Pass	Missing Protection against Signature Replay Attacks.	ChainSwitch.sol	L: 0 C: 0
SWC-122	Pass	Lack of Proper Signature Verification.	ChainSwitch.sol	L: 0 C: 0
SWC-123	Pass	Requirement Violation.	ChainSwitch.sol	L: 0 C: 0
SWC-124	Pass	Write to Arbitrary Storage Location.	ChainSwitch.sol	L: 0 C: 0
SWC-125	Pass	Incorrect Inheritance Order.	ChainSwitch.sol	L: 0 C: 0





ID	Severity	Name	File	location
SWC-126	Pass	Insufficient Gas Griefing.	ChainSwitch.sol	L: 0 C: 0
SWC-127	Pass	Arbitrary Jump with Function Type Variable.	ChainSwitch.sol	L: 0 C: 0
SWC-128	Pass	DoS With Block Gas Limit.	ChainSwitch.sol	L: 0 C: 0
SWC-129	Pass	Typographical Error.	ChainSwitch.sol	L: 0 C: 0
SWC-130	Pass	Right-To-Left-Override control character (U+202E).	ChainSwitch.sol	L: 0 C: 0
SWC-131	Pass	Presence of unused variables.	ChainSwitch.sol	L: 0 C: 0
SWC-132	Pass	Unexpected Ether balance.	ChainSwitch.sol	L: 0 C: 0
SWC-133	Pass	Hash Collisions with Multiple Variable Length Arguments.	ChainSwitch.sol	L: 0 C: 0
SWC-134	Pass	Message call with hardcoded gas amount.	ChainSwitch.sol	L: 0 C: 0
SWC-135	Pass	Code With No Effects (Irrelevant/Dead Code).	ChainSwitch.sol	L: 0 C: 0
SWC-136	Pass	Unencrypted Private Data On-Chain.	ChainSwitch.sol	L: 0 C: 0

We scan the contract for additional security issues using MYTHX and industry-standard security scanning tools.



# Smart Contract Vulnerability Details

## SWC-108 - State Variable Default Visibility

### CWE-710: Improper Adherence to Coding Standards

#### Description:

Labeling the visibility explicitly makes it easier to catch incorrect assumptions about who can access the variable.

#### Remediation:

Variables can be specified as being public, internal or private. Explicitly define visibility for all state variables.

#### References:

Ethereum Smart Contract Best Practices - Explicitly mark visibility in functions and state variables



# Smart Contract Vulnerability Details

## SWC-115 - Authorization through tx.origin

### CWE-477: Use of Obsolete Function

#### Description:

tx.origin is a global variable in Solidity which returns the address of the account that sent the transaction. Using the variable for authorization could make a contract vulnerable if an authorized account calls into a malicious contract. A call could be made to the vulnerable contract that passes the authorization check since tx.origin returns the original sender of the transaction which in this case is the authorized account.

#### Remediation:

tx.origin should not be used for authorization. Use msg.sender instead.

#### References:

Solidity Documentation - tx.origin

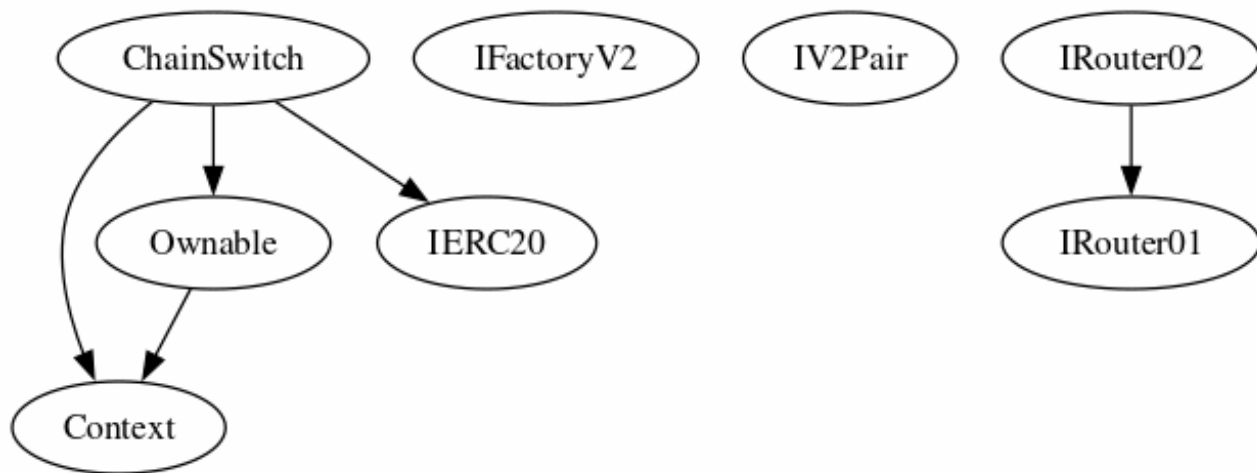
Ethereum Smart Contract Best Practices - Avoid using tx.origin

SigmaPrime - Visibility.



# Inheritance

The contract for ChainSwitch has the following inheritance structure.



## Privileged Functions (onlyOwner)

Please Note if the contract is Renounced none of this functions can be executed.

Function Name	Parameters	Visibility
renounceOwnership		public
transferOwnership	address newOwner	public
setNoFeeWallet	address account, bool enabled	external
changeLpPair	address newPair	external
toggleCanSwapFees	bool yesno	external
changeWallets	address marketing, address team, address development	external
setPresaleAddress	address presale, bool yesno	external



# Smart Contract Advance Checks

ID	Severity	Name	Result	Status
SWTCH-01	Minor	Potential Sandwich Attacks.	Pass	Not-Found
SWTCH-02	Minor	Function Visibility Optimization	Pass	Not-Detected
SWTCH-03	Minor	Lack of Input Validation.	Pass	Not-Detected
SWTCH-04	Major	Centralized Risk In addLiquidity.	Pass	Not-Found
SWTCH-05	Minor	Missing Event Emission.	Pass	Not-Detected
SWTCH-06	Minor	Conformance with Solidity Naming Conventions.	Pass	Not-Found
SWTCH-07	Minor	State Variables could be Declared Constant.	Pass	Not-Found
SWTCH-08	Minor	Dead Code Elimination.	Pass	Not-Found
SWTCH-09	Major	Third Party Dependencies.	Pass	Not-Found
SWTCH-10	Major	Initial Token Distribution.	Pass	Not-Found
SWTCH-11	Minor	AntiBot is present on the transfer.	Pass	Not Detected
SWTCH-12	Major	Centralization Risks In The X Role	Pass	Not-Detected
SWTCH-13	Informational	Extra Gas Cost For User..	Pass	Not-Detected
SWTCH-14	Medium	Unnecessary Use Of SafeMath	Pass	Not-Detected
SWTCH-15	Medium	Symbol Length Limitation due to Solidity Naming Standards.	Pass	Not-Detected








ID	Severity	Name	Result	Status
SWTCH-16	Medium	Invalid collection of Taxes during Transfer.	Pass	Not-Detected
SWTCH-17	Informational	Conformance to numeric notation best practice.	Pass	Not-Detected
SWTCH-18	Medium	Stop Transactions by using Enable Trade.	Pass	Not-Detected










# Technical Findings Summary

## Classification of Risk

Severity	Description
 Critical	Risks are those that impact the safe functioning of a platform and must be addressed before launch. Users should not invest in any project with outstanding critical risks.
 Major	Risks can include centralization issues and logical errors. Under specific circumstances, these major risks can lead to loss of funds and/or control of the project.
 Medium	Risks may not pose a direct risk to users' funds, but they can affect the overall functioning of a platform
 Minor	Risks can be any of the above but on a smaller scale. They generally do not compromise the overall integrity of the Project, but they may be less efficient than other solutions.
 Informational	Errors are often recommended to improve the code's style or certain operations to fall within industry best practices. They usually do not affect the overall functioning of the code.

## Findings

Severity	Found	Pending	Resolved
 Critical	0	0	0
 Major	0	0	0
 Medium	0	0	0
 Minor	0	0	0
 Informational	0	0	0
Total	0	0	0



# Social Media Checks

Social Media	URL	Result
Twitter	<a href="https://twitter.com/ChainSwitch">https://twitter.com/ChainSwitch</a>	Pass
Other		Fail
Website	<a href="https://chainswitch.org">https://chainswitch.org</a>	Pass
Telegram	<a href="https://t.me/ChainSwitch">https://t.me/ChainSwitch</a>	Pass

We recommend to have 3 or more social media sources including a completed working websites.

**Social Media Information Notes:**

**Auditor Notes:** undefined

**Project Owner Notes:**



# Assessment Results

## Score Results

Review	Score
Overall Score	90/100
Auditor Score	80/100
Review by Section	Score
Manual Scan Score	35/53
SWC Scan Score	35 /37
Advance Check Score	20 /19

The Following Score System Has been Added to this page to help understand the value of the audit, the maximum score is 100, however to attain that value the project must pass and provide all the data needed for the assessment. Our Passing Score has been changed to 80 Points, if a project does not attain 80% is an automatic failure. Read our notes and final assessment below.

## Audit Passed



## Assessment Results

### Important Notes:

- No Vulnerabilities or issues were found on the smart contract.

**Auditor Score =80**

**Audit Passed**



# Appendix

## Finding Categories

### Centralization / Privilege

Centralization / Privilege findings refer to either feature logic or implementation of components that act against the nature of decentralization, such as explicit ownership or specialized access roles in combination with a mechanism to relocate funds.

### Gas Optimization

Gas Optimization findings do not affect the functionality of the code but generate different, more optimal EVM opcodes resulting in a reduction on the total gas cost of a transaction.

### Logical Issue

Logical Issue findings detail a fault in the logic of the linked code, such as an incorrect notion on how block.timestamp works.

### Control Flow

Control Flow findings concern the access control imposed on functions, such as owner-only functions being invoke-able by anyone under certain circumstances.

### Volatile Code

Volatile Code findings refer to segments of code that behave unexpectedly on certain edge cases that may result in a vulnerability.

### Coding Style

Coding Style findings usually do not affect the generated byte-code but rather comment on how to make the codebase more legible and, as a result, easily maintainable.

### Inconsistency

Inconsistency findings refer to functions that should seemingly behave similarly yet contain different code, such as a constructor assignment imposing different requirements on the input variables than a setter function.

### Coding Best Practices

ERC 20 Coding Standards are a set of rules that each developer should follow to ensure the code meets a set of criteria and is readable by all the developers.



## Disclaimer

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