Cyberscope

Audit Report

Nala Cat

May 2024

Network	SOL
Type	SPL-Token
Address	FvGeJFLV2myo8AR8QUYVSZhuNxhxYydKebpdbfhQgJsu
Audited by	© cyberscope

Analysis

Critical Medium Minor / Informative Pass

Severity	Code	Description	Status
	ST	Stops Transactions	Passed
	OTUT	Transfers User's Tokens	Passed
	ELFM	Exceeds Fees Limit (Transfer Fee Authority)	Passed
	MT	Mints Tokens (Mint Authority)	Unresolved
	BT	Burns Tokens	Passed
	BC	Blacklists Addresses (Freeze Authority)	Passed

Diagnostics

Critical Medium Minor / Informative

Severity	Code	Description	Status
●	UA	Update Authority	Unresolved
●	ITA	Initial Token Allocation	Unresolved

Table of Contents

Review

Network	SOL
Explorer	https://solscan.io/token/FvGeJFLV2myo8AR8QUYVSZhuNxhxYydKebpdbfhQgJsu
Fixed Supply	100,000,000
Token Address	FvGeJFLV2myo8AR8QUYVSZhuNxhxYydKebpdbfhQgJsu
Token name	NALA CAT (NLC)
Owner Program	Token Program
Decimals	6
Metadata File Type	JSON
Badge Eligibility	Must Fix Critical

Audit Updates

Initial Audit	12 May 2024

Overview

The `NALA CAT` token symbolized as `NLC`, is a distinguished SPL (Solana Program Library) token initialized using the TokenkegQfeZyiNwAJbNbGKPFXCWuBvf9Ss623VQ5DA Token Program on the Solana blockchain, with a supply of `100,000,000` tokens. The token uses the URL https://bafkreiggh3leji7axv3aazl2is5dzxpxdw2ukz3zr37au66n6fuvocehiq.ipfs.nftstorage.link , which points to a decentralized storage service, while the image https://bafkreieyw2xanhyvgn7qbcyzgoavncx5tryaewyca65doxigfuaoygqt5e.ipfs.nftstorage.link is used for visual identification of the token across platforms and marketplaces. Overall, the solana token is a distinct entity within the Solana network, identifiable by its unique characteristics as outlined in its metadata.

Metadata

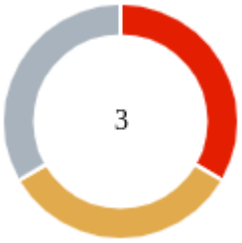
The Metaplex Metadata provides details of the characteristics of the `NALA CAT` token, a distinctive digital asset on the Solana blockchain tailored for utilizing the Metaplex Metadata. This metadata includes crucial information necessary for the asset's seamless integration and operation within the Solana ecosystem. Specifically, the metadata was initiated by declaring the `HJh8JXs82CEihjzA65YEUfR7DSp8AukST2i2GGyRodhX` as the update authority attribute, which points to the account authorized to modify the metadata. The mint attribute specified the account `FvGeJFLV2myo8AR8QUYVSZhuNxhxYydKebpdbfhQgJsu` authorized for the initial token mint. The asset imposes `sellerFeeBasisPoints` of 0 basis points, indicating no transaction fee for trading is set. The metadata indicates that the asset has not yet undergone its primary sale as indicated by the `primarySaleHappened` value set to 0, and is marked as mutable since `isMutable` is 1, allowing for future changes to the metadata. The `editionNonce` of 254 signifies a unique edition, while the `tokenStandard` of 2, aligns with a specified token standard within the Solana blockchain, ensuring its compatibility and standardization across the network. This detailed metadata structure offers a comprehensive overview of the token's key features and its operational framework within the Metaplex ecosystem on Solana.


```
{
  "key": 4,
  "updateAuthority": "HJh8JXs82CEihjzA65YEUfR7DSp8AukST2i2GGyRodhX",
  "mint": "FvGeJFLV2myo8AR8QUYVSZhuNxhxYydKebpdbfhQgJsu",
  "data": {
    "name": "NALA CAT",
    "symbol": "NLC",
    "uri":
"https://bafkreiggh3leji7axv3aazl2is5dzxpxdw2ukz3zr37au66n6fuvocehiq.ipfs.nftstorage.link",
    "sellerFeeBasisPoints": 0
  },
  "primarySaleHappened": 0,
  "isMutable": 1,
  "editionNonce": 254,
  "tokenStandard": 2
}
```

Field	Value	Description
key	4	Account discriminator that identifies the type of metadata account
updateAuthority	HJh8JXs82CEihjzA65YEUfR7DSp8AukST2i2GGyRodhX	The public key that is allowed to update this account
mint	FvGeJFLV2myo8AR8QUYVSZhuNxhxYydKebpdbfhQgJsu	The public key of the Mint Account it derives from
name	NALA CAT	The on-chain name of the token
symbol	NLC	The on-chain symbol of the token
uri	https://bafkreiggh3leji7axv3aazl2is5dzxpxdw2ukz3zr37au66n6fuvocehiq.ipfs.nftstorage.link	The URI to the external metadata. This URI points to an off-chain JSON file that contains additional data following a certain standard
sellerFeeBasisPoints	0	The royalties shared by the creators in basis points — This field is used by most NFT marketplaces, it is not enforced by the Token Metadata program itself
primarySaleHappened	0	A boolean indicating if the token has already been sold at least once. Once flipped to True, it cannot ever be False again. This field can affect the way royalties are distributed
isMutable	1	A boolean indicating if the metadata account can be updated. Once flipped to False, it cannot ever be True again

editionNonce	254	Unique identifier for this edition
tokenStandard	2	The standard of the token

Findings Breakdown



Critical	1
Medium	1
Minor / Informative	1

Severity	Unresolved	Acknowledged	Resolved	Other
Critical	1	0	0	0
Medium	1	0	0	0
Minor / Informative	1	0	0	0

MT - Mints Tokens (Mint Authority)

Criticality	Critical
Status	Unresolved

Description

The token is currently configured in a manner that grants the account `FvGeJFLV2myo8AR8QUYVSZhuNxhxYydKebpdbfhQgJsu` the exclusive capability to mint new tokens at will. This unrestricted minting authority poses a significant risk of token inflation for the token. If the minting capability is exercised without stringent controls or limitations, it could lead to a scenario where the supply of tokens is significantly increased in a short period. Such an action would dilute the value of existing tokens, potentially leading to a loss of trust among investors and users, and ultimately, a decrease in the token's market value. This highlights a critical vulnerability in the token's economic model, where the potential for unchecked token creation could result in a highly inflated token supply, undermining the asset's stability and value proposition.

Recommendation

It is recommended to revoke the mint authority to mitigate the risk of unchecked token inflation. Implementing a fixed supply model could significantly enhance the token's economic security and investor confidence. By removing or significantly restricting the ability to mint new tokens, the token can maintain a stable supply, preserving its value and ensuring a fair and predictable market for all stakeholders.

UA - Update Authority

Criticality	Medium
Status	Unresolved

Description

The contract is currently configured in a manner that allows the update authority, identified by the address `HJh8JXs82CEihjzA65YEUfR7DSp8AukST2i2GGyRodhX`, to retain privileges that enable the modification of crucial metadata fields. The failure to revoke the update authority leaves the token vulnerable to potential risks, as the designated address retains the capability to make changes to the metadata. This oversight could lead to unauthorized or malicious modifications that might compromise the integrity and intended functionality of the token.

Recommendation

It is recommended to revoke the update authority privileges. This action would ensure a consistent security posture across the contract's operational aspects, eliminating the discrepancy that currently allows for undue modification privileges. Implementing this recommendation would align the contract's security measures, providing a more robust defense against unauthorized changes and enhancing the overall security of the contract's operational environment.

ITA - Initial Token Allocation

Criticality	Minor / Informative
Status	Unresolved

Description

The token account `AHE2P5bv62pkAeFNRCV9RBoXFWLuH6YunxsDQyaQRZv6` holds a large portion of total supply. Consequently, at the time of the report, this address owns 100.00% of the entire token supply, amounting to 100,000,000 `NLC`. This concentration of almost the entire token supply in some addresses raises significant concerns about centralization within the token's ecosystem. Such a scenario creates a risk of market manipulation and could lead to other adverse effects, potentially undermining the token's decentralized nature and the overall health of its ecosystem.

Token Account	Quantity	Percentage
AHE2P5bv62pkAeFNRCV9RBoXFWLuH6YunxsDQyaQRZv6	100,000,000	100.00%

Recommendation

It is recommended to distribute the tokens more broadly to achieve a more decentralized token holding structure. This can mitigate the risks associated with centralization and ensure a more stable and secure ecosystem for all participants. If the new addresses consist of a team's wallet address, then the team should carefully manage the private keys of that account. We strongly recommend implementing a robust security mechanism to prevent a single user from accessing the contract admin functions, such as a multi-sign wallet so that many addresses will confirm the action.

Summary

The `Nala Cat` token, built on the Solana network, leverages a solid architecture initiated via the Token program. This audit rigorously evaluates its performance, security, and compliance with best practices. The investigation aims to identify and address any operational vulnerabilities, performance bottlenecks, and areas for optimization, ensuring the token's robustness and reliability in the Solana ecosystem.

The token program analysis reported that the mint authority of the token has not yet been revoked. This situation leaves the token's operations regarding minting actions, open to modifications. Consequently, this critical operation remains exposed to potential adjustments by the owner. Additionally, the update authority privileges have not yet been revoked, meaning the token's metadata remains vulnerable to modifications.

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Cyberscope is one of the leading smart contract audit firms in the crypto space and has built a high-profile network of clients and partners.

The Cyberscope team

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