



Cyberscope

# Audit Report

## **BlackHole**

April 2024

Network SOL

Type SPL-Token

Address 9yLtVVtZ6m9b6khFpgApLyc5ghTv3njWog7HhTXBWY1W

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# Analysis

● Critical ● Medium ● Minor / Informative ● Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

# Diagnostics

● Critical ● Medium ● Minor / Informative

Severity	Code	Description	Status
●	ITA	Initial Token Allocation	Unresolved

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## Review

Network	SOL
Explorer	<a href="https://solscan.io/token/9yLtVVtZ6m9b6khFpgApLyc5ghTv3njWog7HhTXBWY1W">https://solscan.io/token/9yLtVVtZ6m9b6khFpgApLyc5ghTv3njWog7HhTXBWY1W</a>
Fixed Supply	1,000,000,000.00
Token Address	9yLtVVtZ6m9b6khFpgApLyc5ghTv3njWog7HhTXBWY1W
Token name	BlackHole (BKL)
Owner Program	<a href="#">Token Program</a>
Decimals	6
MintTokens Authority	Revoked
FreezeAccount Authority	Revoked
Metadata File Type	JSON
Badge Eligibility	Yes

## Audit Updates

Initial Audit	04 Apr 2024
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## Source Files

Filename	JSON
Metadata/JSON	<a href="https://solscan.io/token/9yLtVVtZ6m9b6khFpgApLyc5ghTv3njWog7HhTXBWY1W#metadata">https://solscan.io/token/9yLtVVtZ6m9b6khFpgApLyc5ghTv3njWog7HhTXBWY1W#metadata</a>

## Overview

The **BlackHole** token symbolized as **BKL**, is a distinguished SPL (Solana Program Library) token initialized using the **TokenkegQfeZyiNwAJbNbGKPFXCWuBvf9Ss623VQ5DA** Token Program on the Solana blockchain, with a fixed supply of **1,000,000,000** tokens since the mint has been disabled. This ensures a stable and unchangeable total supply, enhancing its value proposition within the ecosystem. The token uses the URL <https://bafkreihsh3aop3bv24eueu3lxyutrxnyo4nwe3nizykyrfwrlp5cfe2fwa.ipfs.nftstorage.link/>, which points to a decentralized storage service while the <https://bafkreif3jorwbxeno5wxfozj5u7i33fjuq2so772lbslagqzi5egnxxx7m.ipfs.nftstorage.link> image is used for visual identification of the token across various platforms and marketplaces. Overall, the project is a distinct entity within the Solana network, identifiable by its unique characteristics as outlined in its metadata.

The contract's mint authority has been renounced. The information regarding the transaction can be accessed through the following link:

<https://solscan.io/tx/3UmC7Sd65JttR491KYWCyR5Ya2RMYfw3w5ZhMfC33dEQSWiZVdFb5gwEDJvnRqvSHBk28qtHAhvPtkxJKNui4bU>

The contract's freeze authority has been renounced. The information regarding the transaction can be accessed through the following link:

<https://solscan.io/tx/3hzKyCSvg9iB1fV3bfQV9KQ665ZDy5jpspLc4mxmywg63MmXLDNHGMCBrn93YM6HJaiWM1For5YGkaWgv8gKWYj3>

# Metadata

The Metaplex Metadata provides details of the characteristics of the `BlackHole` 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 update authority attribute specifies the account `7uQc7y1w5NpWhCDcKDHpWDzGxb8AwGhHmTxCxjmiis` authorized to modify the metadata. The mint attribute specifies the account `9yLtVVtZ6m9b6khFpgApLyc5ghTv3njWog7HhTXBWY1W` authorized for the initial token mint. The asset imposes a seller fee of 0 basis points, indicating no transaction fee for trading was set in the deploying phase. The metadata indicates that the asset has not yet undergone its primary sale ( `primarySaleHappened` : 0) and is marked as immutable ( `isMutable` : 0), not allowing for future changes to the metadata. An `editionNonce` of 254 denotes a unique edition, and the asset conforms to a specific token standard within the Solana network ( `tokenStandard` : 2), ensuring its compatibility and standardization across the platform. This detailed metadata structure offers a comprehensive overview of `BlackHole` key features and its operational framework within the Metaplex ecosystem on Solana.

```
{
  "key": 4,
  "updateAuthority": "7uQc7y1w5NpWhCDcKDHpWDzGxb8AwGhHmTxCxjmiis",
  "mint": "9yLtVVtZ6m9b6khFpgApLyc5ghTv3njWog7HhTXBWY1W",
  "data": {
    "name": "BlackHole",
    "symbol": "BKL",
    "uri":
      "https://bafkreihsh3aop3bv24eiku3lxyutrxnyo4nwe3nizykyrfwr1p5cfe2fwa.ipfs.nfts
      storage.link",
    "sellerFeeBasisPoints": 0
  },
  "primarySaleHappened": 0,
  "isMutable": 0,
  "editionNonce": 254,
  "tokenStandard": 2
}
```

Field	Value	Description
key	4	Account discriminator that identifies the type of metadata account
updateAuthority	7uQc7y1w5NpWhCDcKDHpW DzGxb8AwGhHhmTxCxjmiiS	The public key that is allowed to update this account
mint	9yLtVVtZ6m9b6khFpgApLyc5g hTv3njWog7HhTXBWY1W	The public key of the Mint Account it derives from
name	BlackHole	The on-chain name of the token
symbol	BKL	The on-chain symbol of the token
uri	<a href="https://bafkreihsh3aop3bv24ek&lt;br/&gt;eu3lxyutrxnyo4nwe3nizykyrfwrl&lt;br/&gt;p5cfe2fwa.ipfs.nftstorage.link">https://bafkreihsh3aop3bv24ek eu3lxyutrxnyo4nwe3nizykyrfwrl p5cfe2fwa.ipfs.nftstorage.link</a>	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	0	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 0
- Medium 0
- Minor / Informative 1

Severity	Unresolved	Acknowledged	Resolved	Other
<span style="color: red;">●</span> Critical	0	0	0	0
<span style="color: gold;">●</span> Medium	0	0	0	0
<span style="color: grey;">●</span> Minor / Informative	1	0	0	0

## ITA - Initial Token Allocation

<b>Criticality</b>	Minor / Informative
<b>Status</b>	Unresolved

### Description

The token account `8DaUX6qQ6ytPUgDtFGrb6Jk3SVtGNTkg9tZE1T1USSf` 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 1,000,000,000.00 `BKL`. This concentration of almost the entire token supply in one address 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
<code>8DaUX6qQ6ytPUgDtFGrb6Jk3SVtGNTkg9tZE1T1USSf</code>	1,000,000,000.00	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 "BlackHole" token, built on the Solana network, implements a robust smart contract structure that was initialized using the Token program, with analysis revealing 1 minor/informative issue.

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# About Cyberscope

Cyberscope is a blockchain cybersecurity company that was founded with the vision to make web3.0 a safer place for investors and developers. Since its launch, it has worked with thousands of projects and is estimated to have secured tens of millions of investors' funds.

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**

<https://www.cyberscope.io>