



# Cyberscope

## Audit Report

# Elon Musk Wif Hat

February 2024

Network SOL

Type SPL-Token

Address DXSL1ZWgngfG79eUtoQnnSRTydWyQqqapwNuP8LL2ABk

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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	Unresolved
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

# Diagnostics

● Critical   ● Medium   ● Minor / Informative

Severity	Code	Description	Status
●	UA	Update Authority	Unresolved
●	CR	Centralization Risk	Unresolved

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## Review

Network	SOL
Explorer	<a href="https://solscan.io/token/DXSL1ZWgngfG79eUtoQnnSRTydWyQqqapwNuP8LL2ABk">https://solscan.io/token/DXSL1ZWgngfG79eUtoQnnSRTydWyQqqapwNuP8LL2ABk</a>
Fixed Supply	4,000,000,000,000
Token name	Elon Musk Wif Hat (EMWif)
Token address	<a href="https://solscan.io/token/DXSL1ZWgngfG79eUtoQnnSRTydWyQqqapwNuP8LL2ABk">DXSL1ZWgngfG79eUtoQnnSRTydWyQqqapwNuP8LL2ABk</a>
Owner Program	<a href="#">Token Program</a>
Decimals	6
Signature	<a href="#">3nwb6y4FykuEoNbsNadxhk1VLr8GN8KCD5WicHAVdtPA1sPzef1J8xTNTToHK8hHWkRJgsMQiTami1YGuoYZTn4G</a>
Block	<a href="#">249709735</a>
Deploy Time	February 22, 2024 09:35:05 Eastern European Standard Time
Instructions	Create Account, Mint
By	<a href="#">HpVdqHTUUmCJxc8npDB7YwUPaWpMaccxBBHc13TZqR9B</a>
MintTokens Authority	<a href="#">None</a>
FreezeAccount Authority	<a href="#">None</a>
Metadata File Type	JSON
Name	Elon Musk Wif Hat
Symbol	EMWif
Description	EMWif Coin on solana

<b>Image</b>	<a href="https://arweave.net/hGx6h65DN_k63EkNFrHoSX7pe4fdIAM9FoUpndcFJh8">https://arweave.net/hGx6h65DN_k63EkNFrHoSX7pe4fdIAM9FoUpndcFJh8</a>
<b>Total Transfers</b> (At the time of the report)	0
<b>Total Transactions</b> (At the time of the report)	4
<b>Total Holders</b> (At the time of the report)	1

## Audit Updates

<b>Initial Audit</b>	24 Feb 2024
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## Source Files

<b>Filename</b>	JSON
<b>Metadata/JSON</b>	<a href="https://solscan.io/token/DXSL1ZWgngfG79eUtoQnnSRTydWyQqqapwNuP8LL2ABk#metadata">https://solscan.io/token/DXSL1ZWgngfG79eUtoQnnSRTydWyQqqapwNuP8LL2ABk#metadata</a>

## Overview

The Elon Musk Wif Hat token symbolized as EMWif, is a distinguished SPL (Solana Program Library) token initialized using the

`TokenkegQfeZyiNwAJbNbGKPFXCWuBvf9Ss623VQ5DA` Token Program on the Solana blockchain. The Elon Musk Wif token has a fixed supply of 4,000,000,000,000 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 image URL <https://arweave.net/1rW4kHXhx8eW-YIjQXGi1EhGdE6jCKZztIIWBrS-Fh4>, which points to an image hosted on Arweave, a decentralized storage service. This image is used for visual identification of the token across various platforms and marketplaces. Overall, the Elon Musk Wif Hat token is a distinct entity within the Solana network, identifiable by its unique characteristics as outlined in its metadata.

## Transfers

At the time of this report, the transfers of the Elon Musk Wif Hat token are as follows:

Signature	Time (UTC)	Type	From	To	Amount
<a href="#">3WycK5vYDCtJ</a> <a href="#">2tR8TaNYz...</a>	02-22-2024 07:42:27	Spl-Transfer	<a href="#">HpVdgH...T</a> <a href="#">ZqR9B</a>	<a href="#">GTsrNG...C</a> <a href="#">jbLZw</a>	4,000,000,000,000



## Transactions

At the time of this report, the transactions of the Elon Musk Wif Hat token are as follows:

Signature	Block	Time	Instructions	By	Fee (SOL)
<a href="#">3WycK5vYDCtJ2tR8TaNYzatXoPDEky</a>	<a href="#">#249710768</a>	02-22-2024 07:42:27	CreateAssociate dAccount, Spl-Transfer	<a href="#">HpVdgH...TZqR9B</a>	0.000005
<a href="#">3GHBsmSi5XmsVPksECgYvqyb3MNB</a>	<a href="#">#249709991</a>	02-22-2024 07:36:51	SetAuthority	<a href="#">HpVdgH...TZqR9B</a>	0.000005
<a href="#">ymqmY6oLFyLMWqW45qiuzWgn35ezy</a>	<a href="#">#249709943</a>	02-22-2024 07:36:31	SetAuthority	<a href="#">HpVdgH...TZqR9B</a>	0.000005
<a href="#">3nwb6y4FxkuEoNbsNadxhk1VLr8GN8</a>	<a href="#">#249709735</a>	02-22-2024 07:35:05	Create, Mint	<a href="#">HpVdgH...TZqR9B</a>	0.00001

## Holders

At the time of this report, the distribution of Elon Musk Wif Hat token holders is as follows:

#	Token Account	Quantity	Percentage
1	<a href="#">Zpdtrt3HJvuT3N1UPLDxv21KzywaFt7x5heJr1T1hiK</a>	4,000,000,000,000	100%

## Metadata

### MetaplexMetadata

The Metaplex Metadata provides details of the characteristics of the `Elon Musk Wif Hat` token which uses the `EMWif` symbol, 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. The `updateAuthority` field is designated to the account capable of modifying this metadata, identified by the public key `HpVdgHTUUmCJxc8npDB7YwUPaWpMaccxBBHc13TZqR9B`. Furthermore, the mint attribute specifies the account `DXSL1ZWgngfG79eUtoQnnSRTydWyQqqapwNuP8LL2ABk` authorized for the initial token mint.

```
{
  "key": 4,
  "updateAuthority": "HpVdgHTUUmCJxc8npDB7YwUPaWpMaccxBBHc13TZqR9B",
  "mint": "DXSL1ZWgngfG79eUtoQnnSRTydWyQqqapwNuP8LL2ABk",
  "data": {
    "name": "Elon Musk Wif Hat",
    "symbol": "EMWif",
    "uri":
      "https://arweave.net/jEb_Uaj3gfXmr3TfOHEppQy-FxUa6k86QZqhv35jUVo",
    "sellerFeeBasisPoints": 0,
    "creators": [
      {
        "address": "HpVdgHTUUmCJxc8npDB7YwUPaWpMaccxBBHc13TZqR9B",
        "verified": 1,
        "share": 100
      }
    ]
  },
  "primarySaleHappened": 0,
  "isMutable": 1,
  "editionNonce": 253,
  "tokenStandard": 2,
  "name": "Elon Musk Wif Hat",
  "description": "EMWif Coin on solana",
  "image":
    "https://arweave.net/hGx6h65DN_k63EkNFrHoSX7pe4fdlAM9FoUpndcFJh8",
  "symbol": "EMWif"
}
```

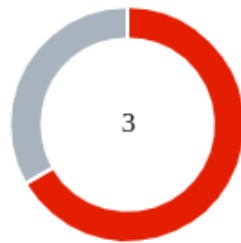
## Metadata description

The `data` section within the metadata discloses the asset's name as "Elon Musk Wif Hat", its trading symbol as "EMWif", and a URI pointing to "[https://arweave.net/jEb\\_Uaj3gfXmr3TfOHEppQy-FxUa6k86QZqhv35jUVo](https://arweave.net/jEb_Uaj3gfXmr3TfOHEppQy-FxUa6k86QZqhv35jUVo)". Notably, 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 mutable (`isMutable` : 1), allowing for future changes to the metadata. An `editionNonce` of `253` 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 "Elon Musk Wif Hat's" key features and its operational framework within the Metaplex ecosystem on Solana.

Field	Value	Description
key	4	Account discriminator that identifies the type of metadata account
updateAuthority	<a href="#">HpVdgHTUUmCJxc8npDB7YwUPaWpMaccxBBHc13TZqR9B</a>	The public key that is allowed to update this account
mint	<a href="#">DXSL1ZWgngfG79eUtoQn nSRTydWyQqgapwNuP8L L2ABk</a>	The public key of the Mint Account it derives from
Name	Elon Musk Wif Hat	The on-chain name of the token
Symbol	EMWif	The on-chain symbol of the token

Uri	<a href="https://arweave.net/jEb_Uaj3gfXmr3TfOHEppQy-FxUa6k86QZqhv35jUVo">https://arweave.net/jEb_Uaj3gfXmr3TfOHEppQy-FxUa6k86QZqhv35jUVo</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	1	A boolean indicating if the metadata account can be updated. Once flipped to False, it cannot ever be True again
editionNonce	253	Unique identifier for this edition
tokenStandard	2	The standard of the token
description	EMWif Coin on solana	Description of the asset
image	<a href="https://arweave.net/hGx6h65DN_k63EkNFrHoSX7pe4fdIAM9FoUpndcFJh8">https://arweave.net/hGx6h65DN_k63EkNFrHoSX7pe4fdIAM9FoUpndcFJh8</a>	URI pointing to the asset's logo.

## Findings Breakdown



● Critical	2
● Medium	0
● Minor / Informative	1

Severity	Unresolved	Acknowledged	Resolved	Other
● Critical	2	0	0	0
● Medium	0	0	0	0
● Minor / Informative	1	0	0	0

## ELFM - Exceeds Fees Limit

Criticality	Critical
Location	Elon Musk Wif Hat
Status	Unresolved

### Description

The update authority has the ability to increase the fees over the allowed limit of 25%. The update authority may take advantage of it by setting the `setTaxFeePercent` variable to a high percentage value.

### Recommendation

The contract could embody a check for the maximum acceptable value. The team should carefully manage the private keys of the update authority's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract's features.

#### Temporary Solutions:

These measurements do not decrease the severity of the finding

- Introduce a multi-signature wallet so that many addresses will confirm the action.

#### Permanent Solution:

- Revoke the update authority, which will eliminate the threats but it is non-reversible.

## UA - Update Authority

Criticality	Critical
Location	Elon Musk Wif Hat
Status	Unresolved

### Description

The contract is currently configured in a manner that allows the update authority, identified by the address `HpVdgHTUUmCJxc8npDB7YwUPaWpMaccxBBHc13TZqR9B`, to retain privileges that enable the modification of crucial metadata fields. This situation arises despite the revocation of authorities related to Mint and Freeze functionalities, which was done to enhance security and reduce the risk of unauthorized alterations. However, the failure to revoke the `update` authority in a similar manner 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 in the same manner as the authority was revoked for the `Mint` and `Freeze` authorities. 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.



## CR - Centralization Risk

Criticality	Minor / Informative
Location	Elon Musk Wif Hat
Status	Unresolved

### Description

The token account `Zpdtrt3HJvuT3N1UPLDxv21KzywaFt7x5heJr1T1hiK`, holds the entire supply of the EMWif token. Following the deployment, all tokens were transferred to this single account. Consequently, this address now owns the entire token supply, amounting to 4,000,000,000,000 `EMWif`. This concentration of 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
Zpdtrt3HJvuT3N1UPLDxv21KzywaFt7x5heJr1T1hiK	4,000,000,000,000	100%

### 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 address consists 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 Elon Musk Wif Hat token, built on the Solana network, implements a robust smart contract structure that was initialized using the Token program, with analysis revealing 2 critical issues.

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

<https://solscan.io/tx/ymqmY6oLFyLMWgW45qiuzWgn35ezyhza1r6WWTyyLeymitpPJtcHp2qpnHM8C7EDwya2DMVb71dX8td93PorwCe>.

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

<https://solscan.io/tx/3GHBsmSi5XmsVPksECgYvqyb3MNBEmczHyJQu8cbocMnHRX3CfPCefMLZ32McWHKhjVtcoywAX5yjYuDHqUFZ8Q>.

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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>