



## ERC-4626: An Ethereum Token Standard for Yield-Bearing Assets

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### SUMMARY

- Decentralized Finance (DeFi) protocols allow market participants to generate yield on their capital, often through a yield-bearing digital asset associated with the protocol.
- Composability, which is the interoperability of components within a system, is a crucial part of the DeFi ecosystem as it enables market participants to optimize the value of their capital.
- There is currently no standard for developers to integrate different yield-bearing digital assets across DeFi protocols without relying on custom solutions.
- ERC-4626 proposes to standardize yield-bearing digital assets, which will reduce the time and effort associated with their development.
- If ERC-4626 is implemented, collaboration and composability between Ethereum-based DeFi protocols are predicted to benefit significantly.

### OVERVIEW

As one of the most popular and widely adopted blockchains, Ethereum has multiple token standards that enable developers to build decentralized applications on top of their network. The most popular and well-known token standards are ERC-20, which is a standard for fungible tokens that are interchangeable akin to equities, and ERC-721, which is a standard for unique non-fungible tokens (NFTs).

Now, numerous Ethereum-based DeFi applications have been built to allow investors to generate yield on their capital. To increase the composability and ease the implementation of yield-bearing digital assets in the Ethereum ecosystem, a new token standard known as ERC-4626 has been proposed.

## WHAT IS A YIELD-BEARING TOKEN?

At its core, a yield-bearing digital asset is a token that intrinsically receives interest due to its use case in an associated DeFi protocol. For example, xSUSHI is a form of staked SUSHI that earns a reward fee of 0.05% from all trades on the SushiSwap platform and aUSDC is a form of deposited USDC on the Aave platform that is actively earning yield from the borrowers' interest payments.

As the DeFi landscape continues to innovate and new business models emerge, the number of protocols that enable yield-bearing mechanisms to attract and sustain liquidity for the functionality of their products will continue to increase. Additionally, composability, which allows for the interoperability of components within a system, is an important part of the DeFi ecosystem. DeFi assets are similar to blocks that can be stacked on top of one another to provide market participants with the ability to optimize the return on their capital. At the same time, composability causes complexity, which then sparked the need for a standardized interface to connect digital assets to smart contract vaults owned by a protocol, such as in the SushiSwap and Aave examples above. Currently, developers need to create custom solutions to integrate every different yield-bearing digital asset.

**Figure A – An Example of Composability: Yield-Bearing Tokens Being Utilized as Collateral to Take Out Crypto Loans**

COMPONENT	TOTAL MIM BORROWED	MIMS LEFT TO BORROW	INTEREST	LIQUIDATION FEE
 cvxtricropto2	253.45M	174.49M	3.5%	5%
 yycrvSTETH	97.25M	148.3M	0.5%	12.5%

Source: [Abracadabra.money](https://abracadabra.money)

## ERC-4626

The new proposed token standard for Ethereum-based yield-bearing digital assets is called ERC-4626. First introduced by Joey Santoro, co-founder of Fei protocol (alongside Jet Jadeja and the pseudonymous transmission11s of Rari Capital), the ERC-4626 token standard aims to simplify the integration of yield-bearing digital assets in DeFi protocols, which will reduce the time and capital required from developers and enhance the composability of the Ethereum DeFi ecosystem.

The associated [proposal](#), titled EIP-4626, is currently under review and its code is publicly available on [GitHub](#). Similar to other Ethereum Improvement Proposals, the code base will undergo an audit by multiple firms before the final merge happens and the associated expenses will be paid by Fei Labs on behalf of Tribe DAO. Unlike EIP-1559, a hard fork will not be necessary to implement the change as the token standard lives on the application layer only. Adoption of this new standard would entirely depend on organic traction from developers and founders.

A case example of a protocol that would benefit greatly from this integration, as its founder enthusiastically [said](#), is Alchemix. Alchemix is a self-repaying loan protocol that allows users to deposit the DAI stablecoin as collateral and borrow up to 50% of the deposited amount in aUSD. Alchemix then utilizes the deposited DAI to gain yield via yearn.finance and SushiSwap, and automatically repay the loan, ensuring that the borrowers' debt goes down over time.

## CONCLUSION

If implemented well and adopted widely in the industry, the ERC-4626 token standard will help protocols and developers save time and capital. The enhanced level of composability that will be made feasible by the new standard is likely to increase the pace of innovation and enhance the state of the Ethereum DeFi ecosystem.

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