

dForce Yield Token (dToken) Scheme

❖ Revision History

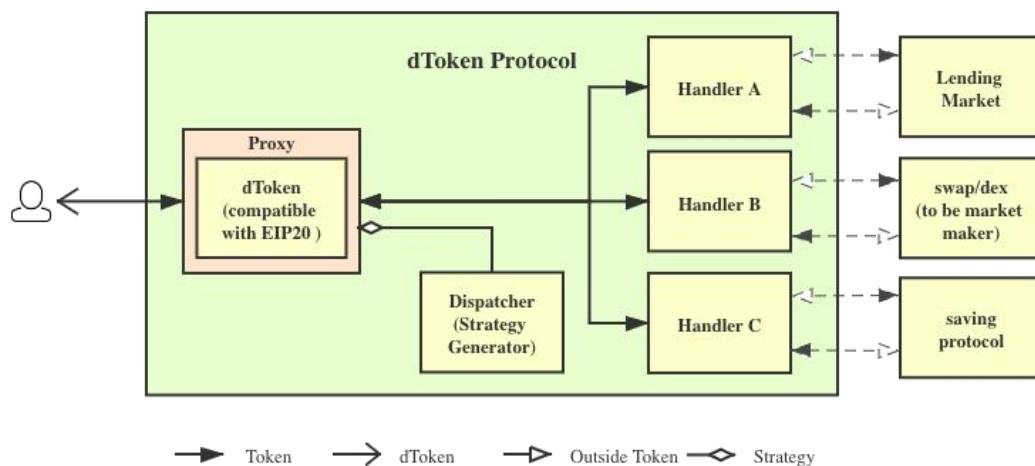
Date	Contents	Editor
2020.3.16	v0.1	Skyge
2020.3.23	v0.2	Horsen
2020.3.25	v0.3	Skyge
2020.3.25	v0.4	Skyge
2020.4.5	v0.5	Horsen
2020.4.6	v0.6	Horsen

❖ Description

dToken is a wrapper of ERC20 tokens within the dForce ecosystem, representing a pro rata claim of a specific ERC20 token plus yields earned, reducing the friction to use DeFi products, and improving the interoperability for other platforms or protocols to interface with dForce. This protocol can wrap any ERC20 token into dToken with interest-generating capability, i.e., dUSDx (a wrapper of USDx), or dETH (a wrapper of WETH). Users will receive dToken when they deposit the corresponding ERC20 token, which is proportional to the stake in the pool and is redeemable at any time. dToken can be transferred to other users, platform or smart contract.

dToken can attend to a variety of yielding protocols (either dForce-native or eco-system projects) simultaneously, for example, integrating with lending protocols for saving interest, liquidity protocols for trading fees, aggregator optimizing returns across protocols, and etc. Each dToken can independently manage yielding protocols supported, and use the built-in dispatcher and optimized strategy to facilitate deposit and redemption of funds. Better liquidity and higher turnover ratio will greatly enhance the return on capital employed.

❖ Architecture



The dToken protocol mainly include three functional contracts (dToken、dispatcher、Handler) and a proxy contract facilitating upgrade function.

dToken contract is compatible to EIP20 standard, with mint and burn functions. dToken will be minted when a user deposits ERC20 token, and get burned when the user redeems ERC20 token with interest earned. It also has Enquiry Interfaces for real-time exchange rate and annual interest rate. When a user deposits ERC20 token into the dToken contract, tokens will be transferred to respective Handler based on the allocation strategy obtained from the Dispatcher.

The Proxy contract is the mantle of dToken, functioning as the storage of static data to facilitate the upgrade of dToken.

The Dispatcher contract attends to manage the Handler with fund deposit and redemption strategies.

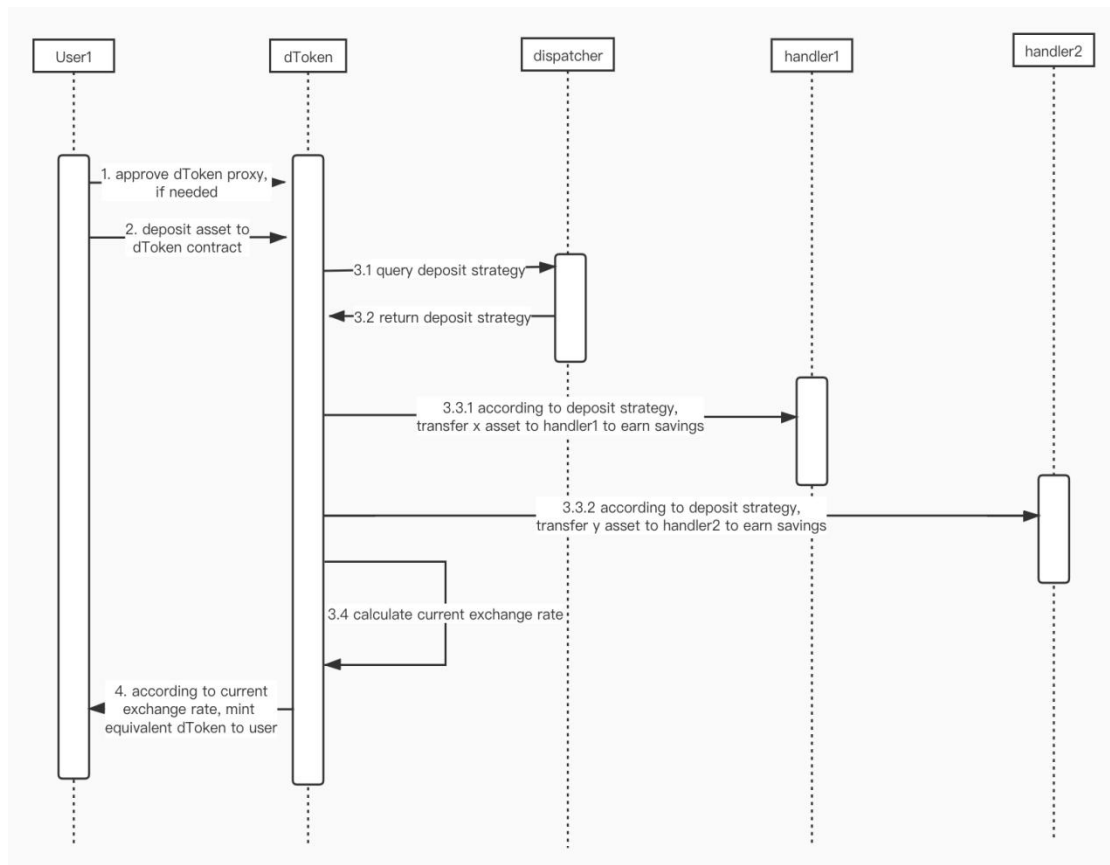
The Handler contract can only be called by the Proxy Contract of dToken and administers the deposit and redemption of funds into/from external protocols, as well as automatic conversion if needed. For example, upon deposit of USDx, Handler will first convert USDx to USR and supply USR into Lendf.Me to earn interest. Vice versa, withdraw USR from Lendf.Me and have USR converted into USDx and returned to the user upon request.

The dToken protocol has three types of roles: User, Owner and Manager, with respective calling permissions listed as below:

- User: ERC20 operations, mint, burn, redeem
- Owner: change owner, set manager, set pause, takeout tokens
- Manager: set other parameters

❖ Timing diagram

Mint:



Burn:

