



BENFEN WHITE PAPER

One-Click Token Issuance White Paper

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BenFen Chain introduces the "One-Click Token Issuance" feature, designed to provide a simple, secure, and configurable entry point for token creation. This functionality supports a wide variety of asset types, including standard crypto tokens, stablecoins, and RWAs, enabling users of all backgrounds — from professional developers to non-technical individuals — to safely and efficiently create and issue their own on-chain tokens.

1. Token Issuance Mechanism

BenFen Chain adopts an object-centric model, which is fundamentally different from the account-based architecture used by blockchains such as Ethereum. In this design, tokens are not just balances within user accounts — they are independent **objects** that encapsulate their own data and ownership. The process of issuing a token, therefore, involves defining and managing a new transferable object via smart contracts, known as Move modules. This object-oriented approach makes the logic around asset transfer, destruction, and lifecycle management more transparent and modular, while also enabling parallel execution, significantly improving on-chain performance and throughput.

To simplify and standardize asset issuance, the BenFen framework includes a built-in core module called coin, which defines standard structures and behaviors for all fungible tokens, such as minting, burning, splitting, and merging. Anyone can invoke the standard functions provided by this module to create tokens without redefining or duplicating standards, ensuring security, interoperability, and consistency across the entire ecosystem.

2. Specific Process of Token Issuance

The process of creating and issuing a token on the BenFen Chain follows the steps below:

- 1. Token Parameter Configuration:** The user begins by configuring core parameters via the issuance interface. These include the token name, symbol, minimum unit, and initial total supply at launch.
- 2. Token Type Definition:** Based on the user's input, the system automatically generates a dedicated Move smart contract module. At its core, this module defines a unique **witness type**—an empty struct that stores no data, but serves as a cryptographic identity for the token across the network. This ensures that the newly created token is uniquely identifiable and distinguishable from all other assets.

3. **Token Registration:** Once the type is defined, the system deploys the module. During initialization, it automatically invokes a registration function from the official coin module. This step registers the new token on the blockchain and generates a critical on-chain object called **TreasuryCap**. This object acts as the sole authorization to mint new tokens in the future and is securely transferred to the user's wallet.
4. **Token Minting and Initial Supply:** Using the TreasuryCap held in the user's wallet, the system automatically executes an initial minting operation based on the total supply defined by the user. The minted tokens are generated as a token object and immediately transferred to the user's wallet.

3. Types of Tokenized Assets

Beyond the issuance of standard fungible tokens by project teams, BenFen Chain's One-Click Token Issuance feature also supports two of the most crucial areas in the crypto asset landscape: stablecoins and Real World Asset (RWA) tokenization.

3.1 Stablecoins

Stablecoins serve as a vital bridge between digital assets and real-world value, forming the foundational layer of the DeFi ecosystem. On BenFen, users can issue their own stablecoins, but must establish a direct on-chain exchange relationship with external, cross-chain imported mainstream stablecoins to ensure reliable value backing. The process works as follows:

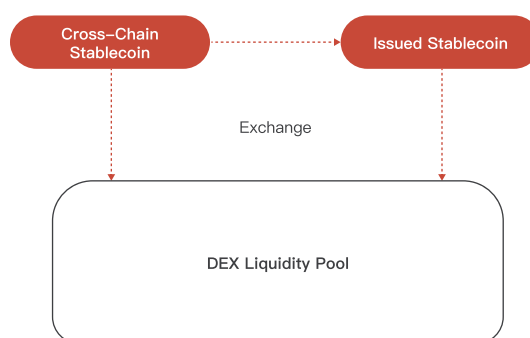


Figure 1: Stablecoins Creation Flowchart

1. **Introduce Value Reserve:** The issuer must first bridge a certain amount of mainstream stablecoins from other chains to BenFen via the BenFen cross-chain bridge, to serve as the initial reserve.
2. **Create a Liquidity Pool:** Once the issuer creates a new stablecoin using the One-Click Issuance feature, they are required to set up a liquidity pool on the official BenFen DEX (BenPay DEX), pairing their new stablecoin with an external mainstream stablecoin.
3. **Maintain Price Peg Stability:** The issuer is responsible for managing the liquidity pool to maintain the stablecoin's price peg. Price data from this pool is continuously monitored by the BenPay DEX oracle, which supplies accurate pricing to other protocols in the ecosystem, such as lending platforms and derivatives exchanges.

3.2 RWA

Tokenizing real-world assets—such as real estate, equities, bonds, and other tangible or financial instruments — is one of the most promising applications of blockchain technology. However, the core challenge of RWA lies in ensuring that on-chain tokens accurately represent off-chain ownership rights, while complying with real-world legal and regulatory frameworks. BenFen adheres to a "compliance-first" approach to the issuance and management of RWA tokens.

- **Legal and Documentation Completeness:** RWA issuers are required to provide comprehensive legal documentation, including asset descriptions, third-party valuation reports, proof of ownership, and investment terms. These documents must clearly define the legal rights of token holders, including ownership, income rights, and profit-sharing entitlements.
- **Custody and Auditing:** Issuers must appoint qualified and regulated third-party institutions to custody and audit the underlying assets regularly. BenFen will actively collaborate with licensed trustees, asset management firms, and other compliant entities to ensure the authenticity, integrity, and legal clarity of off-chain assets backing the RWA tokens.
- **Investor Identity Verification:** To comply with global AML/KYC regulations, all RWA issuers and participants must undergo identity verification through protocols such as BenFen KYC. Only verified and compliant users are allowed to issue, invest in, or trade RWA tokens within the BenFen ecosystem.

4. Paying Gas Fees with Project Tokens

In traditional blockchains, users must pay gas fees using native tokens (such as ETH or BNB) to initiate any transaction. This creates a significant barrier to entry for users—they must first obtain native tokens through specific channels before interacting with applications. To optimize the user experience, BenFen innovatively allows users to pay gas fees directly with whitelisted project tokens. This not only makes on-chain interactions more seamless for users but also provides additional payment utility for tokens issued by ecosystem projects, enhancing their intrinsic value and demand.

This mechanism uses the BenPay DEX oracle to obtain the fair price of project-issued tokens. This price is updated at the beginning of each epoch and remains stable throughout the epoch. When users trade, the system automatically calculates and deducts the equivalent gas fee from the user's project token balance based on this exchange rate.

To protect the entire network from attacks by tokens with poor liquidity and easily manipulated prices, this feature utilizes a community-governed whitelisting system. Projects can submit proposals to have their tokens whitelisted for gas fee payment. The community will vote based on a comprehensive consideration of factors such as project quality, token liquidity, and economic stability. If the proposal receives enough votes in favor, the token will be added to the whitelist and can be officially used to pay gas fees for the entire network.

5. Using Sponsored Transactions for Gas Payment

Besides supporting users to pay gas fees with project tokens, Benfen further provides a sponsored transaction feature. Sponsored transactions allow projects to directly cover the gas fees required for user transactions. This significantly lowers the barrier to entry for new users, helping projects attract and retain users more efficiently. Furthermore, projects can selectively sponsor specific types of on-chain transactions to achieve targeted user incentives and ecosystem guidance.

The key to Benfen's implementation of sponsored transactions lies in its transaction structure, which clearly separates the "transaction initiator" from the "gas payer" at the protocol level. This natively decoupled design makes sponsored transactions exceptionally simple to implement, eliminating the need for complex off-chain operations such as "pack-and-forward." Consequently, it significantly reduces development costs and significantly improves transaction security, speed, and transparency.

The specific process for a sponsored transaction is as follows:

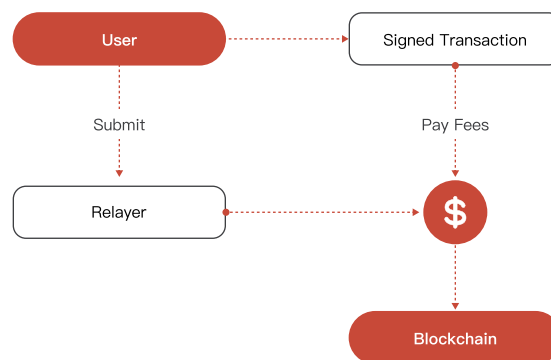


Figure 2: Flowchart of Sponsorship Transactions

1. **User constructs and signs the transaction intent:** When a user initiates a transaction, the DApp constructs a **Programmable Transaction Block (PTB)** based on the user's intent. This PTB contains the specific on-chain operations to be executed and sets the transaction sender to the user's address. The DApp then requests the user to sign the PTB to confirm their agreement to the intended execution.
2. **Submit the request to the sponsor:** After the user completes the signature, the request data, including the PTB itself and its corresponding signature, will be sent to the sponsor for verification.
3. **Sponsor verifies the request:** After receiving the request, the sponsor performs strict policy validation to prevent abuse. The validation may include user identity, transaction frequency limits, and whether the operations within the PTB fall within the scope of sponsorship, etc.
4. **Sponsor wraps and signs the transaction:** After the validation passes, the sponsor will add gas payment information to the transaction (such as payment address, acceptable gas price, the gas fee limit for this transaction, etc.), and use their private key to sign the complete transaction, authorizing the gas fee to be paid from the sponsor's account.

5. **Transaction submission and on-chain confirmation:** This transaction, containing both the user's and sponsor's dual signatures, is submitted to the BenFen chain node. Before execution, the node will verify the validity of both signatures. After passing verification, the operations in the transaction will be executed, the gas fee will be deducted from the sponsor's account, and the transaction will be completed.