JPYR

2026

Whitepaper

Prepared by

JPYR

1. Executive Summary

The proof of freedom brought about by Japanese yen-pegged stablecoins

1.1 What is JPYR

Bringing the trust of the Japanese yen to the world

JPYR is a "pegged stablecoin" whose value is linked to the Japanese yen (JPY) at a 1:1 ratio.

It is designed as a digital platform to function in a wider range of environments without altering the value of the Japanese yen, for applications such as payments, settlements, international remittances, and DeFi.

Our goal is to re-establish the stability, reliability, and transparency that the Japanese yen has acquired over a long period of time on the irreversible mechanism of blockchain, thereby realizing a world where it can function beyond the constraints of time and place.

1.2 Safety that underpins trust

The unchanging circle and the invisible protection

JPYR is issued on Ethereum (ERC-20) and its supply is managed by the Mint/Burn process.

Its operational infrastructure employs key management and signature methods based on Threshold MPC-CMP.
This mechanism ensures that the private key does not reside in a single location, but is managed as a distributed set of multiple elements.

As a result, no single person can control the whole, nor can one accident cause the whole to collapse.
The stability of the yen as legal tender and digital asset management technology are quietly intertwined within this design.

1.3 Features

Why is JPYR "fast, safe, and easy to use"?

- Global and instant remittances based on Ethereum.
- MPC-CMP enables signature speeds up to 8 times faster than conventional methods.
- Preventing the risk of erroneous transfers through AAA (Automated Address Authentication)
- All operations are recorded on-chain and fully traceable.

2. Background and Vision

Bringing Japanese "hospitality" into the digital realm

2.1 Paper Money, Reimagined

The Japanese yen is a currency that has maintained its reliability for many years, with relatively little price fluctuation compared to other currencies worldwide.

Based on these characteristics, JPYR aims to provide value that can be securely stored and exchanged even in the digital space.

We will create a system for the Japanese yen that is supported not solely by people and institutions, but by cryptographic technology and verifiable mechanisms.

2.2 Current Challenges

Invisible constraints are stopping the flow of value

The traditional financial system includes,

- Restrictions on business hours
- The time and high fees associated with international money transfers
- Service outages that occur on weekends and holidays

These are some of the challenges that exist.
These factors, though rarely explicitly stated, certainly limit value.

JPYR removes these constraints on the blockchain, functioning as a payment method that is always operational.

2.3 The Future We Aim For

An economic sphere of the Japanese yen that is not dependent on time or place

JPYR envisions a new economic sphere for the Japanese yen that extends beyond Japan.
Through international money transfers, cross-border transactions, and integration with DeFi, we will expand an environment where value can be handled more freely, without being bound by time or location.

We aim for a future where the value of the yen remains unchanged, but the world becomes the stage.

3. User Experience

Innovations brought about by technology

3.1 Freedom from erroneous transfers

AAA (Automatic Address Verification)

In the world of cryptocurrency, transaction errors cannot be reversed.
A single typo in the recipient's address can result in the permanent loss of assets.

JPYR utilizes Automated Address Authentication (AAA) on the Fireblocks Network to automatically verify recipient addresses within the encrypted tunnel. If the address is not legitimate due to input errors or address spoofing, the transaction will be blocked.

This process takes place outside of the user's awareness and aims to reduce risk before they feel any anxiety.

3.2 A world without latency

Accelerating signatures with MPC-CMP

We use MPC-CMP to speed up the processing time for money transfers.
Compared to conventional signature methods, it achieves speeds up to 8 times faster, making payments, mint/burn, and smart contract operations no longer a "waiting game."

3.3 Eliminating barriers to use

Extension to multi-chain

JPYR is issued on Ethereum (ERC-20) and is designed with future multi-chain support in mind.

A design that is not tied to a specific chain will enable even greater freedom for JPYR.

4. Technical Architecture

An invisible structure supports the whole

4.1 Distributed Key Management

Security without a single correct answer

The private key is divided into multiple shares and stored in a distributed manner across the following environments to avoid the risk of breaches at physical data centers.

- Multiple Tier-1 cloud providers (Microsoft Azure and IBM Cloud)
- Multiple on-premises data centers (physically separated locations)
- Hybrid environment using cloud and on-premises simultaneously

Furthermore, the next-generation MPC-CMP protocol is compatible with cold storage, allowing for flexible operation tailored to specific requirements.

In this structure, there is no "key that ends the game if you take it."

4.2 Policy Engine (TAP)

Decisions are made by systems, not by people

TAP enforces approval rules based on conditions such as assets, amounts, counterparties, roles, and time.

All of these processes are performed within a secure enclave, minimizing any possibility of arbitrary judgment.

4.3 Asset Lifecycle

Visibility of issuance and redemption

JPYR minting and burning are recorded on-chain, and their history is always verifiable.

Therefore, the supply can only be changed by a clear operation: Mint (issuance) or Burn (recovery).

5. Foundations of Governance and Trust

A design philosophy free from arbitrary decisions

JPYR is designed to be independent of individual decision-making.
Roles (duties) are separated by organizational function, and a strict approval workflow driven by a policy engine is applied to the execution of transactions.

Governance structure:

Governance / Management: 3 people

Responsible parties, approvals, and conflict of interest policies.

Compliance & Legal： 2 people

KYC/AML/CFT, sanctions, account suspension/authority compliance, terms of service implementation.

Reserve & Treasury: 3 people

Reserve asset policy, liquidity management, custody, segregated accounts, revaluation and reporting.

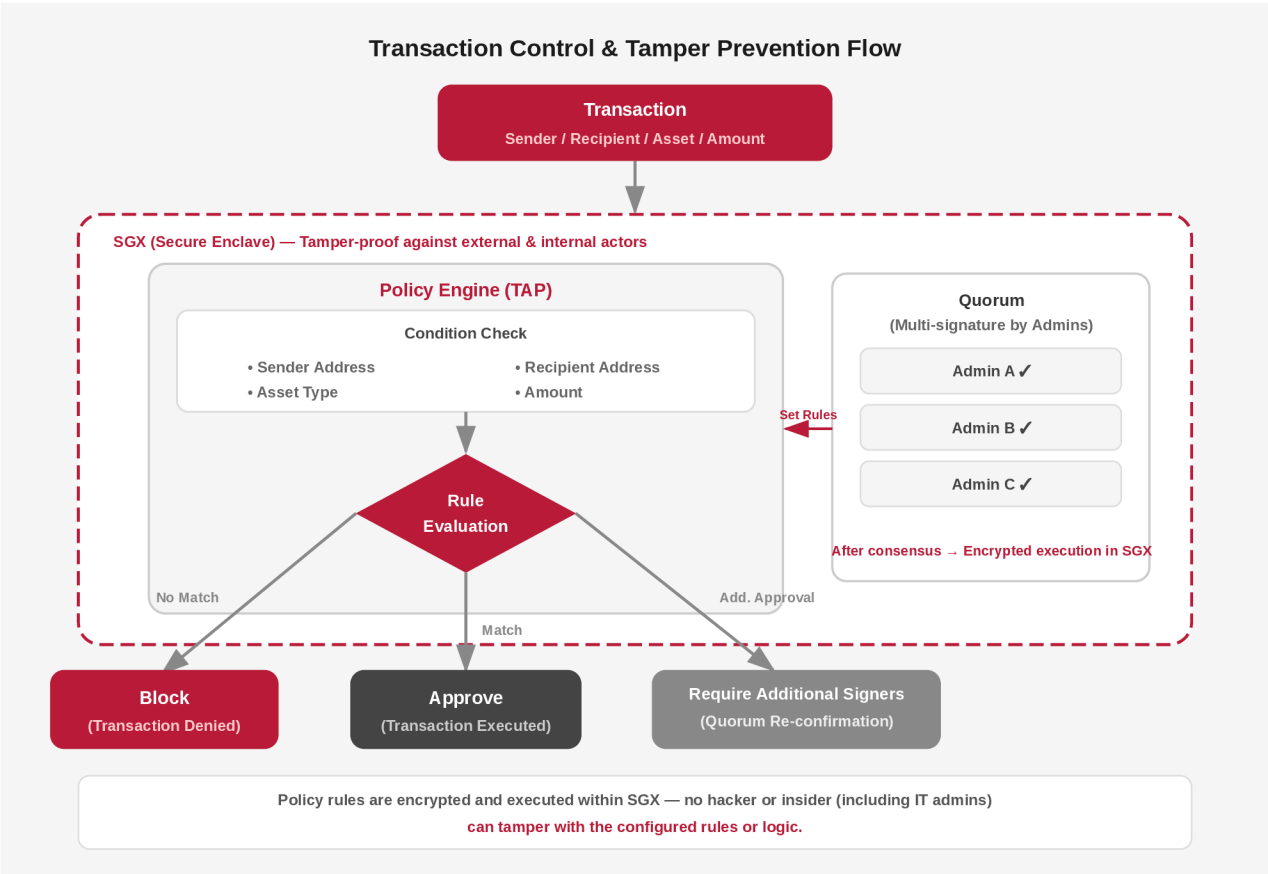
6. Transaction control and tamper prevention

Enforce a robust approval flow based on well-protected rules

Through our proprietary policy engine, you can pre-configure approval rules for each transaction.
For example, it becomes possible to precisely manage whether to reject, approve, or request additional approval for a transaction based on conditions such as the sender, recipient, target asset, and amount.

Furthermore, these policy rules are executed encrypted within a hardware-isolated SGX (Secure Enclave) after being agreed upon by multiple administrators. Because the engine itself is implemented within SGX, the design prevents hackers, as well as internal personnel such as IT administrators, from illegally altering the configured rules and logic.

Conceptual diagram



7. Use Cases and Future Prospects

A world where the Japanese yen has "behavior"

JPYR supports multiple use cases, including payments and remittances, as well as lending, staking, and liquidity provision in the DeFi space.
Going forward, we aim to further expand the scope of JPYR's applications by connecting with more protocols and services, and to play a fundamental role in on-chain finance as a yen-denominated digital asset.

Currency is evolving from a mere medium to an entity with behavior.

8. Technical Requirements - 1

8.1 Token Specifications

- Token name : JPYR (JPY-pegged stablecoin)
- Token standard : ERC-20
- Initial issuance chain : Ethereum
- Contract address : 0xAf5D2cf39F2d4E2F5900D6cf37ab3596866347e4
- Multi-chain : Planning for future responses
- Total supply : Varies depending on Mint/Burn (no fixed supply)
- Uses : Payments, remittances, cross-border remittances, DeFi
  On-chain history enables full auditing.

8.2 Key Management and Signature Methods

The Threshold MPC-CMP protocol divides the key into multiple shares, which are then distributed and deployed across the following three locations.

1. Online environment (for operations)
2. Offline air gap environment
3. BCP (Business Continuity Plan) locations

* Always maintain a minimum of 1 share in a cold (offline) state.

Furthermore, MPC-CMP is compatible with cold storage and supports hot, warm, and cold deployment configurations.
Recovery and key redistribution are performed using quorum-based key rotation.

8. Technical Requirements - 2

8.3 Separation of duties and access control

JPYR's operational permissions are strictly separated based on the following execution permission role configuration.

Execution Permissions Role	Number of Members	Authority & Responsibilities
Issuer Admin	2	Proposal of Policy Changes
Compliance Officer	1	KYT / AML Review and Approval
Operations	2	On-chain Execution

The following quorum is required for a transaction to be executed:

Operation	Quorum	Required Approvers
Mint	3-of-5	Issuer Admin × 1 / Compliance Officer × 1 / Operations × 1
Burn	2-of-4	Issuer Admin × 1 / Operations × 1

Additionally, the Policy Engine (TAP) enforces the following constraints:

- Daily issuance caps
- Per-address caps
- Counterparty allow-list (restricts recipients to Fireblocks Network peers only)
- Time-window restrictions

All of these constraints are enforced by the policy engine and recorded in an auditable format. Because Policy Engine operates within a Secure Enclave (SGX), even internal personnel, including IT administrators, cannot tamper with the configured rules.

8. Technical Requirements - 3

8.4 Mint / Burn Workflow

The minting/burning of JPYR is processed in the following six steps.
KYT/AML and Travel Rule screening are performed inline within the approval workflow.

1	**Request intake** We accept requests for Mint or Burn.
2	**KYC/KYT screening** Real-time screening using Chainalysis, Elliptic, and TRM Labs. Travel rule processing by Notabene is also performed simultaneously.
3	**Policy-driven approval routing** TAP routes requests to the necessary approvers according to quorum settings and policy constraints.
4	**MPC signing** Once a quorum (Mint: 3-of-5 / Burn: 2-of-4) of approvals is reached, the MPC-CMP signing protocol will be executed. Private keys will not be consolidated in a single location.
5	**On-chain submission** The signed transaction is submitted to the Ethereum network.
6	**Ledger and audit log finalization** The entire history of approval and execution will be recorded and saved as an audit log.

8. Technical Requirements - 4

8.5 External transfers and prevention of erroneous transfers

JPYR restricts the recipient of payments to only approved peers on the Fireblocks Network.

- Recipient restrictions: Only transfers to Fireblocks Network approved peers are permitted.
- Automatic verification of the recipient's address using AAA (Automated Address Authentication)
  - Reduces the risk of erroneous transfers due to address spoofing and pasting errors.
- The authentication process is performed via an encrypted tunnel within a secure hardware enclave.

8.6 Audit Trails and Observability

All operations performed in JPYR are recorded.

- We maintain a full audit trail for policy changes, approvals, and rejections.
- All mint/burn events are recorded on-chain and are always verifiable.
- Changes in supply occur only as a result of explicit operations.

JPYR

To forge a new path for future

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