Positions Finance: Proof-of-Collateral

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1 Introduction

Positions Finance introduces the Universal Collateral Manager (UCM), a decentralized financial infrastructure designed to optimize collateral management across the DeFi ecosystem. UCM enables the aggregation of open or locked assets as collateral into a unified framework, facilitating seamless cross-protocol utility. By allowing users to deposit assets into vaults, supply liquidity, stake LP tokens, and more that also accrue yields — all consolidated into a single non-fungible token (NFT) representation — UCM abstracts the complexity of managing multiple collateral positions across fragmented blockchain networks.

This NFT, serving as a Proof-of-Collateral, can be utilized across various DeFi protocols without the need to create new collateral positions. This approach enhances liquidity access and maximizes asset utility, allowing users to deploy locked or open assets across multiple networks without resorting to liquidation, withdrawal, or cross-chain bridging. Furthermore, UCM significantly reduces the overhead associated with capital inefficiency by unlocking latent liquidity, offering users a highly capital-efficient collateral management solution.

From a protocol perspective, UCM addresses the critical challenge of reducing entry barriers for end users by providing frictionless access to collateralized positions. Protocols can expand their user base while retaining access to collateral in the event of liquidation, ensuring robust risk management. In doing so, UCM contributes to the broader DeFi landscape by fostering higher levels of participation and liquidity without compromising the integrity of collateralized assets.

2 Overview

The Universal Collateral Manager (UCM) represents a transformative leap in decentralized finance (DeFi) by introducing a streamlined, interoperable collateral management system. UCM merges the liquidity optimization of traditional financial platforms with the flexibility and interoperability of non-fungible tokens (NFTs). By enabling users to deposit assets—such as ETH, USDC, and WBTC—into decentralized vaults that accrue interest and receive a Proof-of-Collateral (PoC) NFT. This NFT can then be integrated within the broader

ecosystem or across integrated third-party protocols, unlocking sophisticated cross-chain functionality and liquidity across borrowing, perpetuals, and more.

3 Key Components

3.0.1 Vaults

Positions Finance allow users to deposit assets across various vaults consisting of locked and open liquidities. These vaults accrue interest over time with the integration across staking, restaking protocols, while also providing liquidity to the protocol. By consolidating multiple assets within a single vault system, UCM optimizes liquidity provisioning, ensuring both yield maximization and unlock cross-chain utility and liquidity as collateral.

3.0.2 Proof of Collateral (PoC) NFT

As the user deposits the assets across the vaults, user received a Proof of Collateral (PoC) NFT. This NFT represents the user's claim to their deposited collateral and assets in the vaults and can be freely used as Proof of Collateral across various other DeFi protocols.

3.0.3 Cross-Protocol Collateralization

The PoC unlock utility and liquidity across the chains, and protocols. A user could simply use it the PoC on any other Perp Dex to open new long/short positions, or leverage trade across futures, or even simple borrow. This enables the users to access their locked/open liquidity without having to create new collateral for each new protocol, while cutting down the barrier of entry for the protocols to acquire new users and generate additional revenue. This opens up possibilities for leveraging liquidity across different DeFi ecosystems.

3.0.4 Positions Liquidation Engine

If a borrower's position falls below the required collateralization threshold, the Positions Liquidation Engine automatically liquidates the user's positions to protect the protocol's solvency. This mechanism ensures stability and minimizes bad debt within the system.

3.0.5 Third-Party Integrations

Third-party DeFi protocols can integrate the PoC NFT to enable users to use PoC NFT within their ecosystem. The universal design of the PoC ensures that multiple DeFi protocols across various chains can interact with the collateral provided by users of Positions Finance, creating a seamless multi-chain collateral experience.

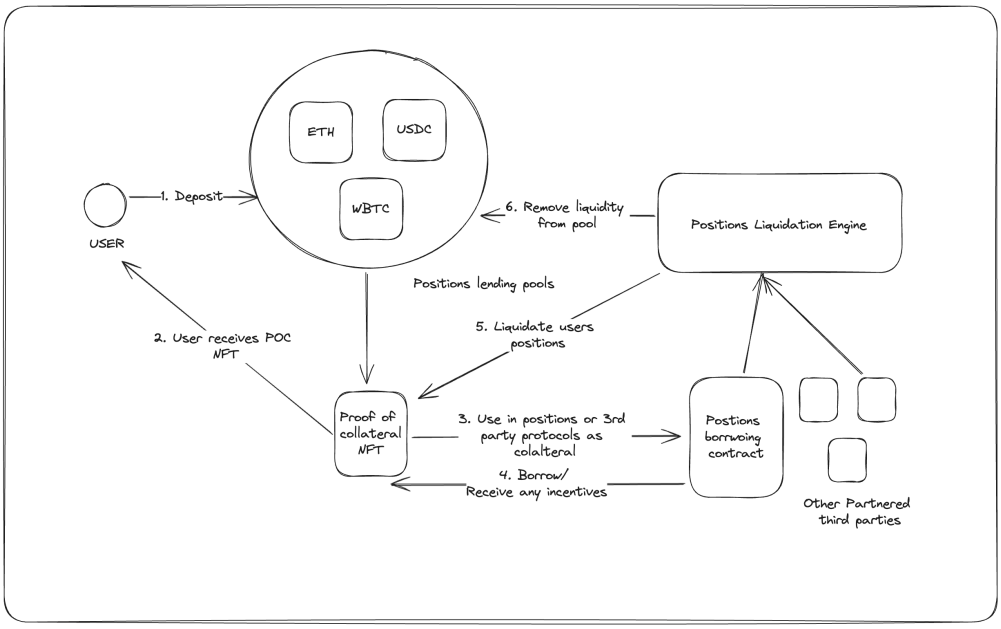

Figure 1: Universal collateral Manager with PoC

4 Core Features

1. **Multi-Asset Collateralization:**Users can deposit different assets like ETH, USDC, and WBTC, or even LST/LRT within the vaults integrated within the Positions protocol.

2. **Interoperable NFTs:** The Proof of Collateral NFTs can be used as collateral across a range of DeFi protocols and applications.

3. **Permissionless Integration:** Any third-party DeFi protocol can integrate with the UCM, allowing the PoC NFTs to be used as collateral within their ecosystem.

4. **Automated Liquidations:** Positions Finance features an automated liquidation engine that ensures protocol solvency by liquidating positions that fall below the required thresholds.

5. **Decentralized and Cross-Chain:** By leveraging general message passing and cross-chain capabilities, the UCM ensures that users can interact with protocols across various blockchains, enhancing liquidity and capital efficiency.

5 Risk Management

The Universal Collateral Manager (UCM) implements a robust risk management framework to ensure the safety of users' funds, automated balanced liquidation, and the overall stability of the ecosystem. While the protocol enables permissionless interactions with third-party platforms, several measures have been put in place to mitigate risks associated with liquidity, price volatility, and collateral management. Below are the key components of UCM's risk management strategy:

5.0.1 Collateralization and Loan-to-Value (LTV) Ratios

To maintain solvency, the protocol enforces strict collateralization requirements, ensuring that users deposit assets worth more than the amount they are borrowing, or using as collateral. This is managed through dynamic Loan-to-Value (LTV) ratios. For example, if the LTV ratio is set at 70%, a user must maintain collateral worth 30% more than the borrowed asset's value.

1. Over-collateralization: All borrowing transactions require users to lock in collateral that exceeds the value of their borrowed assets. This protects the protocol from rapid changes in market prices.

2. Collateral locking: The collateral locking mechanism ensures that the collateral cannot be double-pledged across multiple protocols. The utilisation of collateral is tracked and locked when ever it's been used on any integrated third party protocol.

3. Dynamic LTV Adjustments: The system can adjust LTV ratios depending on the asset's risk profile. More volatile assets may have lower LTV ratios to account for the higher risk of price swings.

5.0.2 Volatility and Market Risk

The protocol is designed to minimize exposure to rapid fluctuations in asset prices. Several features are in place to manage volatility risk:

1. Diverse Asset Vaults: The UCM supports multiple stable and volatile assets (e.g., ETH, USDC, WBTC, various other LSTs/LRTs), which helps diversify risk. Stablecoins like USDC offer low volatility, while assets like ETH and WBTC are managed with stricter collateral ratios.

2. Collateralization Thresholds: The system applies different collateral thresholds based on asset volatility. Stablecoins generally require lower collateral, while more volatile assets like ETH have higher collateral requirements to account for potential price swings.

5.0.3 Third-Party Protocol Risks

Since third-party protocols can integrate with the UCM, there is always a risk that these external systems could introduce vulnerabilities. To mitigate this:

1. Risk-Based Whitelisting: While the system aims to be permissionless, the protocol can whitelist or prioritize partnerships with third-party protocols that undergo strict security audits. These partnerships help reduce risks from integration.

2. Monitoring and Alerts: The UCM continuously monitors interactions with third-party protocols and can flag abnormal behaviors or vulnerabilities that arise from external integrations.

3. Timely Liquidation of Collateral: In the event of vulnerabilities or performance issues with third-party protocols, the liquidation engine ensures that PoC NFTs and collateral can be liquidated before damage spreads to the broader system.