Realyn Protocol

[1]Version 1.0

Abstract - Realyn is a CeDeFi protocol designed to unlock liquidity from real-world assets (RWAs) by enabling users to borrow cryptocurrency without needing existing crypto collateral. By integrating verified t approved assets such as U.S. Treasury bonds, gold, stocks, etc under the Realyn Collective, the protocol bridges traditional finance and decentralized finance in a seamless, compliant, and capital-efficient manner. Realyn addresses key pain points in both TradFi and crypto, including complex onboarding, limited access, and capital inefficiency. Through a smart contract-driven lending architecture and a growing network of institutional partners, Realyn aims to create a global, inclusive financial layer where real-world value flows freely and securely on-chain..

Keywords**:** RWA; CeDeFi; Tokenizaton

1 Introduction

Realyn is the pioneering CeDeFi protocol connecting traditional financial systems and decentralized finance by enabling users to borrow cryptocurrencies backed by real-world assets (RWAs). A significant obstacle impeding massive adoption of cryptocurrency is the complexity and risk associated with fiat-to-crypto onboarding processes. Realyn Protocol provides an accessible mechanism through which individuals can leverage real-world assets as collateral to obtain cryptocurrency loans. By removing the requirement for native crypto collateral, Realyn substantially expands the potential borrowers and enhances accessibility, facilitating broader participation among mainstream users and traditional market participants in cryptocurrency markets.

Realyn builds upon proven DeFi architectures such as the Aave protocol, with the primary distinction being the collateral structure. Instead of requiring users to supply volatile crypto assets, Realyn allows borrowers to deposit verified RWAs as collateral. This approach opens new financial access to users who hold traditional financial instruments but lack digital assets.

When users deposit approved RWAs into the protocol, they receive borrowing capacity based on a dynamic loan-to-value (LTV) ratio defined by the protocol's risk parameters. These assets are locked in the protocol's smart contracts, ensuring capital security and enabling overcollateralized borrowing. Interest accrues on the borrowed crypto, and repayment allows users to reclaim their RWA collateral.

Realyn further supports liquidity providers who supply crypto to the lending pool, earning yield based on interest paid by borrowers. The protocol features both passive liquidity provisioning and active risk-managed lending against RWAs, creating a hybrid market structure that balances yield, security, and accessibility.

Protocol	Core Model	Collateral Type	Onboarding Complexity	Use Cases
Realyn	CeDeFi lending pool	Selected RWAs (e.g., bonds)	Low	Crypto loans via RWA collateral
Centrifuge (Tinlake)	Pool-based asset financing	NFTs of real-world invoices	Medium	SME financing, structured credit
Maple Finance	Delegate-managed loan pools	Uncollateralized	High	Institutional lending
Goldfinch	Community-governed credit pools	Off-chain business revenue	Medium	Emerging market lending
Ondo Finance	Tokenized securities access	Treasuries, ETFs	Low	On-chain exposure to TradFi assets
TrueFi	Borrower whitelisted, unsecured loans	None (credit-based)	High	Institutional DeFi lending

Table 1: Comparative analysis

2 Realyn Overview

2.1 Glossary

Realyn Collective: A curated and verified network of asset issuers and custodians supporting the onboarding of RWAs into the Realyn protocol.

Mirroring: The process through which users tokenize real-world assets (e.g., U.S. bonds) from approved Realyn Collective partners and deposit them on-chain as collateral.

LendingPool: The core smart contract managing deposits, crypto borrowings, repayments, and liquidations.

2.2 How to Borrow

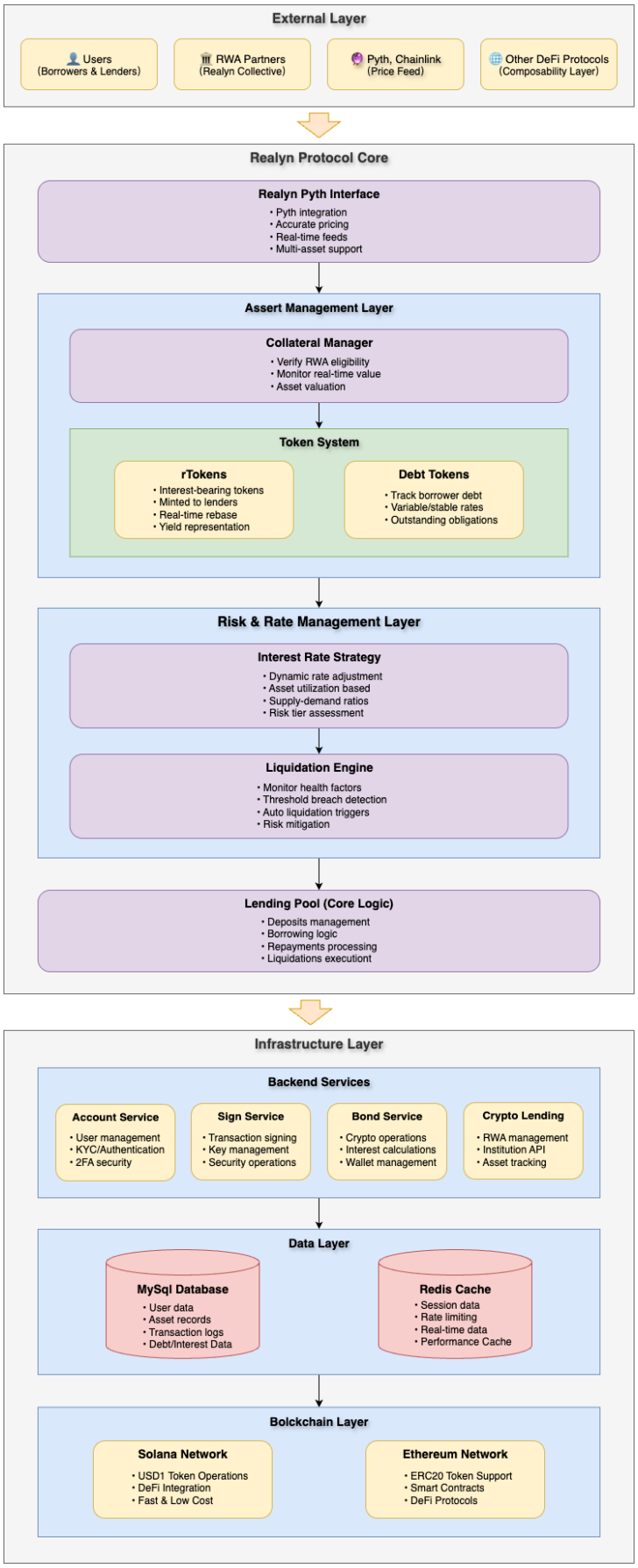
Step 1. Deposit your RWA collateral into Realyn Tokenize your real-world asset that Realyn Protocol supported through a verified issuer from the Realyn Collective and despoit into the LendingPool via smart contract as collateral.

Step 2. Borrow Crypto Instantly borrow supported cryptocurrencies like SOL/USD1 based on LTV parameters.

Step 3. Utilize Funds Use borrowed crypto across DeFi protocols, payments, or yield strategies.

Step 4. Repay and Reclaim Repay the loan with interest and retrieve the original asset.

2.3 Protocol Architecture



The architecture is modular and extensible, comprising:

- Collateral Manager: Verifies eligibility and monitors real-time value of RWA assets.
- Interest Rate Strategy Module: Dynamically adjusts interest rates based on asset utilization, supply-demand ratios, and risk tier.
- rTokens (Realyn variant): Interest-bearing tokens minted to lenders representing their supplied crypto. These tokens rebase in real-time to reflect earned yield.
- Debt Tokens: Issued to borrowers to track their outstanding variable or stable-rate debt obligations.
- Liquidation Engine: Monitors loan health factors and triggers collateral liquidation when thresholds are breached.
- Realyn Oracle Interface: Connects to external oracles like Chainlink to ensure accurate collateral pricing.

The system uses upgradeable proxy contracts to allow seamless updates and multi-chain deployment. All components are audited, permissionless, and designed for composability with other DeFi protocols.

3 Risk management

Realyn's risk management framework is designed to balance security, capital efficiency, and borrower protection. Key components include:

Collateral Valuation and LTV Ratios

- Each supported RWA is assigned a loan-to-value (LTV) ratio based on historical volatility, issuer credibility, and market liquidity.
- U.S. Treasury bonds may be assigned higher LTVs (e.g., 80–90%) compared to more volatile RWAs like tokenized commodities.

Liquidation Thresholds and Mechanics

- If the value of collateral falls below the defined threshold, the protocol automatically triggers a liquidation process.
- Liquidation penalties and auction mechanisms are calibrated to ensure fair recovery while discouraging risk-taking behavior.

Realyn Collective Oversight

- All RWAs must be issued and verified by Realyn Collective partners.
- Regular audits, price feeds, and asset verifications are conducted through on-chain oracles and off-chain reports.

Smart Contract Security

- Core contracts (e.g., LendingPool, liquidation engine) undergo rigorous audits by leading security firms.
- Emergency pause functions are in place to respond to critical vulnerabilities or oracle failures.

Protocol Governance and Upgrades

- Governance proposals enable parameter adjustments, such as interest rate models or supported asset classes.
- The Realyn DAO (to be launched) will oversee long-term risk strategy, insurance reserves, and policy updates.

4 CONCLUSIONS

Realyn represents a foundational step in making decentralized finance more inclusive, secure, and connected to the real economy. By allowing crypto borrowing against real-world collateral, it eliminates one of the major bottlenecks for non-crypto-native users and institutions. As Realyn evolves, it aims to become a cornerstone of the CeDeFi landscape, enabling a global user base to unlock liquidity and financial empowerment through trust-minimized, on-chain infrastructure.