

NOVA

Nova Finance: Programmable Asset Framework

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1. Background

Within the blockchain ecosystem, on-chain execution has been rapidly growing in activity and complexity. The DeFi industry is one of the many valuable use cases for on-chain programs being realized today and has attracted over \$100bn in capital in under 2 years. With this increase in demand and opportunity, two challenges have emerged:

- 1) Some blockchains in their current form are unable to support increased on-chain activity in a sustainable manner, resulting in poor user experience leading to reduced value for users.
- 2) The diversity of opportunity within the DeFi space is overwhelming and engagement requires significant levels of effort from most types of users.

Solana's blockchain has emerged as a front-runner for sustainable on-chain execution; It's infrastructure is scalable, fast and low cost. With the ability to handle up to 50,000 transactions per second (TPS) and the average transaction cost at the time of publication being around 0.000005 Sol (\$0.00077), Solana is able to provide a seamless user experience when they engage with on-chain programs.

DeFi, and indeed the blockchain ecosystem itself, is part of a wider digital evolution called the *Internet of Value*. These digital environments are making money, data and services more efficient, transparent and accessible for the masses. As we continue to engage further in the digital frontier, more of what we own will live in these environments. Nova's programmable asset framework will act as a decentralized management layer that allows people to control their engagement and exposure in these environments.

2. Design Philosophy

- Provide access to all types of digital value

Cryptocurrency, stablecoins, representative tokens, NFT's and others are all contributing towards the evolution of the internet of value. Our role is to make these accessible and give users sufficient controls to navigate these asset classes.

- Optimize user value at every opportunity

With so much potential, it is hard for users to engage within the internet of value and fully capitalize on the available opportunities. Our framework and integrations are designed to allow users to extract as much value as possible.

- Automation over Education

Blockchain has come a long way in regards to useability in the first 12 years of its existence but there is still a long way to go. Education has been a primary focus in driving user adoption but we believe that automation is a more beneficial focus. A user should be able to receive value with as little education and steps as possible.

3. Programmable Asset Framework

When someone utilizes the programmable asset framework, they will receive an output token called an nAsset. These tokens represent the assets the user has deployed within the framework.

It's important to note that the composition of an nAsset can change over time depending on any instructions implemented. The nAsset can also come to represent additional assets that are produced through the instructions assigned to the nAsset.

The "Portfolio Program" is a reference to the overall protocol smart contract, or program as it is called in Solana, that handles the management of assets and other key operations.

- nAsset Creation

In order to execute the nAsset mint, the user will have to send an asset such as USDC, SOL or BTC, referred to as an SPLM-Primary, from a primary user token account, referred to as the SPLU-Primary.

The SPLU is used to store SPLM assets. Both the SPLM and SPLU's are used throughout the nAsset framework and will have one of these conditions:

Primary: These are accounts and assets that are owned by the user before the deposit

Secondary: These are accounts in which the user has autonomy but the Portfolio Program has ownership over the assets in order to execute automatically based on user instruction.

Tertiary: These are accounts used by the Portfolio Program to store assets obtained from programmed instructions. Regular users will often refer to programmed instructions as trading strategies within the Nova platform. Assets acquired when a trading strategy is executed, are stored in Tertiary accounts. This helps to distinguish and maintain the relationship that the acquired asset has with assets stored within Secondary accounts. Similar to Secondary, the user has autonomy over the account but the ownership is the Portfolio Program.

The user mints a data account for the nAsset, called the portfolio program mint address (PPM). The PPM contains crucial on-chain information about the nAsset such as assets involved as well as any supporting metadata for the nAsset. This information is hashed so that the nAsset rule set cannot be altered once minted. The user can get back their SPLM-Primary asset at any time by exiting the portfolio without any lock condition. The user has full control but will be required to delegate access so that the full nAsset infrastructure can be implemented.

At this time, a user data account is also created called the portfolio program user (PPU). The PPU contains specific information for that user in relation to the overall PPM. The PPU allows a user to use a PPM safely without risk of improper accounting and settlement amongst participants.

- nAsset Management

When the nAsset has been minted, the underlying infrastructure to manage assets being deposited into the nAsset is then formed. During the deposit stage, the SPLM-Primary is converted into the composition defined during the nAsset creation process.

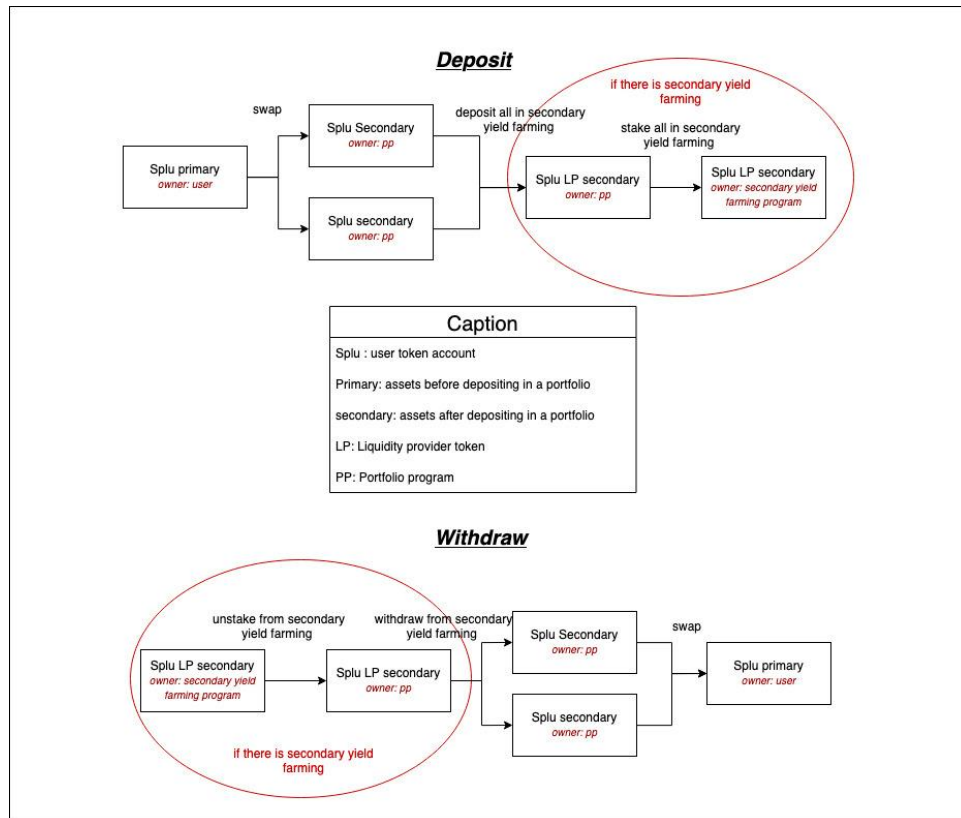


Diagram illustrating Deposit & Withdraw process

The conversion can be executed by any on-chain swap or trade programs providing it can be ensured through cross program invocation. Nova currently uses Serum Swap, an on-chain central limit book-based swap program.

To execute the deposit and conversion, the conversion program takes the SPLM-Primary asset, executes the conversion and sends the SPLM-Secondary assets into separate SPLU-Secondary accounts for each asset. The SPLU_Secondary accounts are owned by the portfolio program. Hence, by depositing the assets into a portfolio, the user allows the program to execute the instructions defined within the nAsset framework.

To withdraw, the SPLM-Secondary assets leave the SPLU-Secondary accounts and are swapped back to SPLM-Primary via the conversion program. They are then returned to the user.

Example

Alice owns 1000 USDC, she wants to generate an nAsset which is comprised of 33% USDC, 33% SOL and 33% BTC which has been designed by Portfolio Creator, Bob

When Alice mints the nAsset, her 1000 USDC are placed into the SPLU-Primary account.

Alice approves permission for the conversion program to convert 666.66 USDC into SOL and BTC.

Each of the USDC, SOL & BTC are then placed into SPLU-Secondary accounts:

| Account | Asset (SPLM) | Amount |
|--------------------------------|--------------|---------|
| SPLU-Primary before conversion | USDC | 1000 |
| SPLU-Primary after conversion | USDC | 0 |
| SPLU-Secondary 1 | USDC | 333.33 |
| SPLU-Secondary 2 | SOL | 2.45 |
| SPLU-Secondary 3 | BTC | 0.00823 |

Bob has designed the Portfolio with programmed instructions to sell 10% of the SOL within the portfolio every 30 days into USDC.

The Portfolio Program engages the Serum Swap program 30 days later and converts funds into USDC at a rate of \$100. The USDC is sent to an SPLU-Tertiary account. Alice's assets are now distributed and represented in the following structure:

| Account | Asset (SPLM) | Amount |
|--------------------------------|--------------|---------|
| SPLU-Primary before conversion | USDC | 1000 |
| SPLU-Primary after conversion | USDC | 0 |
| SPLU-Secondary 1 | USDC | 0 |
| SPLU-Secondary 2 | SOL | 2.205 |
| SPLU-Secondary 3 | BTC | 0.00823 |
| SPLU-Tertiary 1 | USDC | 24.50 |

- Programmability

When a user creates or participates in an nAsset which has additional instructions, assets within the nAsset can be converted or transferred over time based on the rules and instructions set. Typically, there will be two types of programmable activity that can be executed:

1. Trading Strategies

These are instructions to convert an asset within the nAsset into another and allow an nAsset to change its composition based on conditions set by the user. The PPM defines the instruction for swaps based on the user's input.

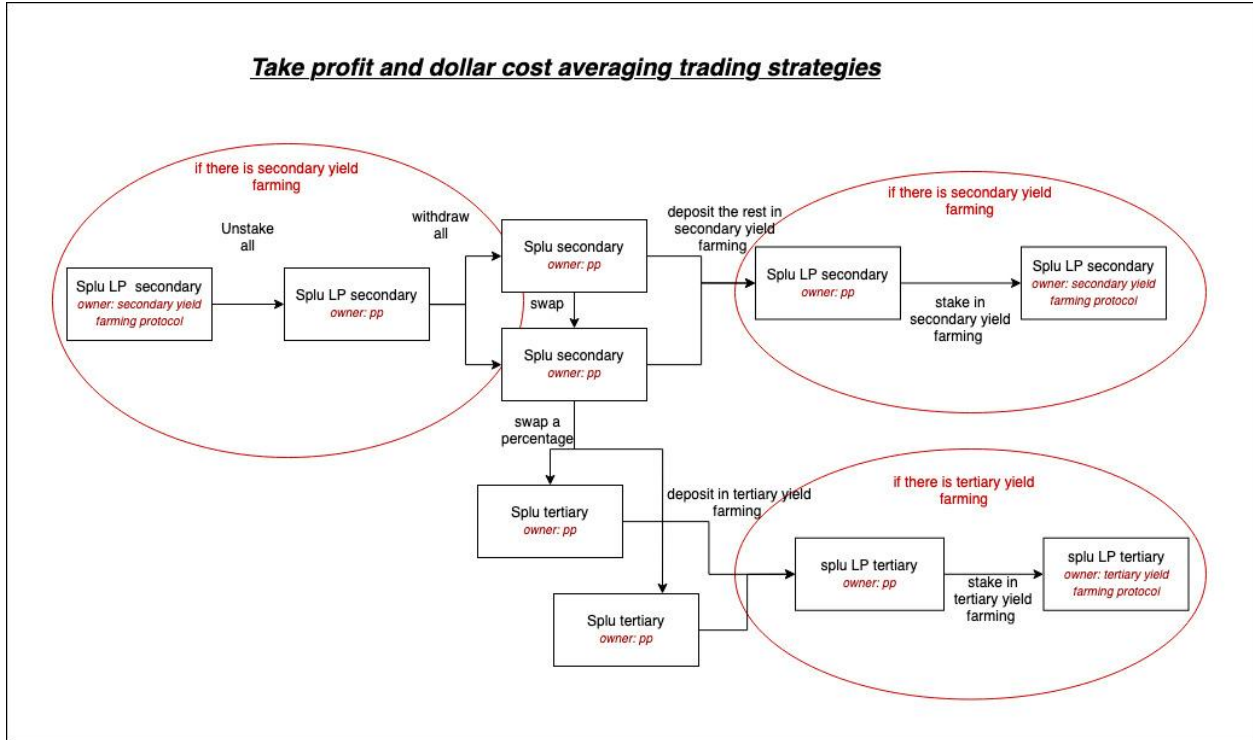
Swaps can take place based on a number of conditions such as time and asset price. In the latter, and for other off-chain data types, oracles are used to provide reliable information for the conversion program to act upon.

Periodically, the conversion program is called to check oracle data. If conditions are met, then the PPM will execute a conversion using a swap protocol.

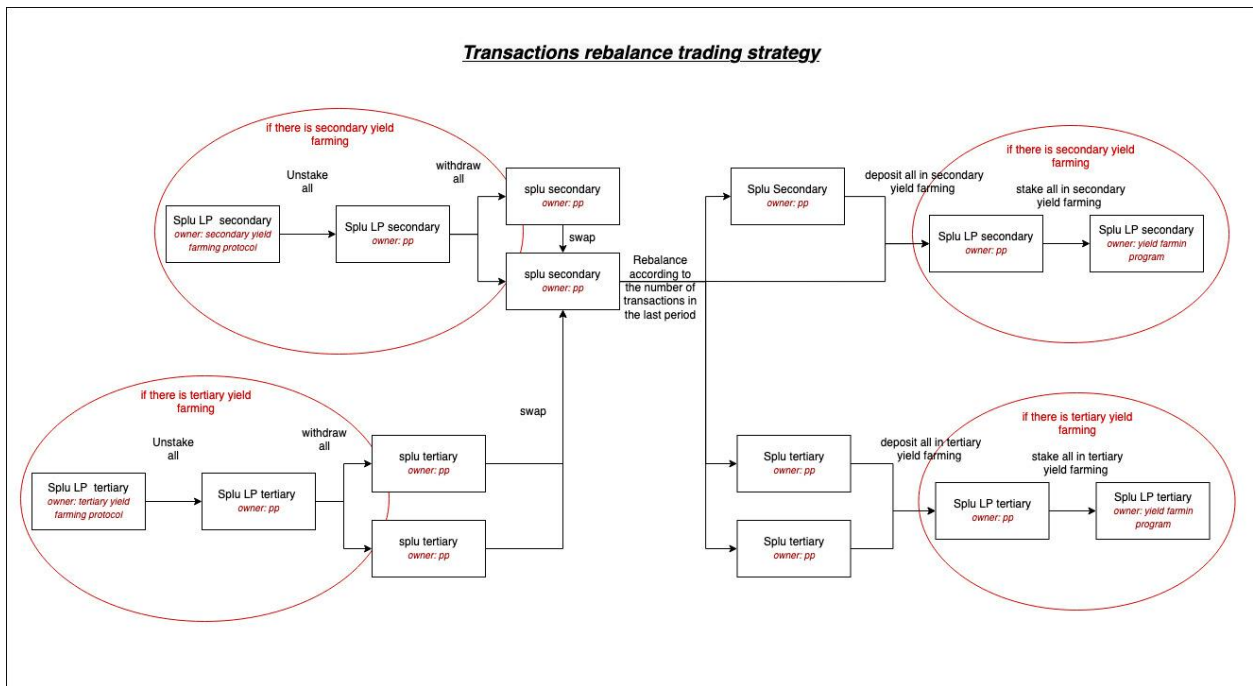
In order to fund this operation, a small percentage of yield is recovered by the Portfolio Program, around 0.25%. When engaging with external protocols such as Serum Swap, there are fees that are passed on to the user when they authorize activity.

To begin with, Nova will provide a range of pre-defined strategies for users to utilize. However, this is an area that anyone will be able to contribute to over time as the protocol's governance system matures.

Below are some examples of predefined strategies and their flow. In the first example, a take profit/dollar cost averaging (DCA) strategy is described where funds are routinely converted into another asset and placed within Tertiary accounts:



Here's another example of a more complex trading strategy that rebalances multiple assets based on on-chain transaction activity:



2. Vault Deposits

A vault is a general term for a protocol or program such as a liquidity pool or lending protocol which requires control over a user's funds, typically in order to generate a form of yield or capture reward tokens. Following the instructions defined in the PPM, the portfolio program can delegate tokens from the SPLU-Secondary or the SPLU-Tertiary to external programs in order to generate a liquidity provision token that will be staked automatically to generate reward tokens.

When engaging with a vault, the PPM also creates a user account for reward tokens, referred to as the SPLUR. The user can withdraw rewards received directly from the SPLUR. In the future, funds arriving in the SPLUR can be programmed through the PPM to transfer or convert these assets into SPLU-Secondary or even to SPLU-Tertiary through the trading strategies.

As returns are generated from a vault, the following shares are captured:

| Type | Allocation |
|-------------------------------|------------|
| Asset Owner (User) | 85% |
| Portfolio Creator | 10% |
| Nova Treasury | 4.75% |
| Portfolio Program Fee reserve | 0.25% |

These distributions are subject to change. Adjustments will be made through the Nova governance protocol and ecosystem participants

4. Application

The nAsset framework powers the Nova Finance MVP and will go on to power subsequent products and iterations for select audiences such as retail and institutional funds.

Features

- Portfolios

The Nova Finance MVP is a portfolio sharing platform where experienced cryptocurrency users can automate and optimise their investment strategies.

It allows anyone to create and deploy dynamic portfolio nAssets with a range of automated controls. Users can take advantage of these automated rules to manage their assets and adapt to emerging market trends. It allows users to optimize gains and/or reduce capital risk.

For less experienced users, they can participate within an portfolio and strategies created by an experienced user. This can enable people with less experience to participate in a sustainable manner within the cryptocurrency ecosystem.

- Auto Yield Generation

Portfolio Assets can be configured to be deposited into yield opportunities and gather additional assets and returns for users. Users who participate in a strategy created by another will automatically give 10% of their yield generated to the portfolio creator as a form of incentivization to encourage the creation and sharing of insight and strategies.

On launch, many yield strategies will be available and new strategies will be continuously added as new opportunities arise.

- Staking Program

Any Portfolio nAssets will be eligible to participate within a staking program where they will receive Nova tokens based on the dollar value of their nAssets. Further details will be released when the program goes live.

Benefits

- Customisation

The nAsset infrastructure provides a great deal of flexibility and fluidity for an asset while allowing users to reduce risk and optimize gains. As the protocol evolves, there will be increased diversity in the types of control, functionality and connectivity that the nAsset framework can deliver for users.

- Composability

nAssets minted on Solana take the form of the SPL token standard. This means that it is easy for other protocols to accept and use the value stored within an nAsset.

An example use case may be using an nAsset as a Collateralized debt position (CDP) to mint a stable coin asset while the composition of the nAsset actively changes and captures yield elsewhere.

Protocols will be able to query the value and contents of an nAsset in order to ensure appropriate allocation and liquidation activities take place.

- Control

A portfolio provides access to a wide range of functionality while ensuring that the user has full autonomy and transparency over the activity that their deposited assets are executing. A user can exit a portfolio at any time with no penalty.

5. Future Development

The development of the Nova Finance Protocol will be driven by governance, user feedback and evolution of the DeFi landscape. Our development roadmap is likely to change and adapt over time as new opportunities and priorities unfold. To stay updated with the Nova roadmap, visit our website and community channels for more information.

The following is a list of developments which we have identified as crucial milestones and contributions to the Nova Finance protocol and its infrastructure:

Third party integrations

Nova will be continuing to expand its capabilities for integrating and connecting with different asset classes, functionality and protocols. We will also be increasing the accessibility for other developers to utilize and engage with the Nova Finance Protocol to allow them to provide additional value to their own user base.

Meritocratic Voting

Governance within the blockchain space has seen a range of different experiments and versions emerge in recent times such as quadratic voting on platforms like Bitcoin and Curve.Fi's incentivization and delegation models. However, we believe that there is still opportunity to create improved decision making models.

Meritocracy is the belief that the best ideas are given the support regardless of their source and origin. Decisions within the Nova Protocol will be scored across a number of common network values. The best ideas will score highly across the value factors and will be prioritized and implemented the quickest. People who propose and support the best ideas will be rewarded for their efforts.

The governance system will be responsible for making decisions in the following areas:

- nAsset Integrations
- Protocol upgrades and modifications
- Treasury Spend
- Portfolio Assessments

As the project matures, more autonomy will be handed over to the network in terms of

direction and decision making. This transition will be detailed in a separate governance Litepaper released closer to the governance launch.

Multi-Chain Functionality

The value of Nova's programmable framework is derived from the range of functionality and access it can provide users. Therefore, it's imperative that Nova expands support for a wider range of assets and blockchains to provide maximum value to our users.

EVM compatibility and deployment will be a major focus in the expansion of Nova Finance and the assets in which it supports. However, due to the limitations in cost and efficiency on certain EVM compatible chains, careful consideration will be taken when selecting chains and available functionality to ensure a high quality user experience.

6. NOVA Token

Utility

The Nova Token is primarily a governance oriented token. The Nova Token will be a significant weighting factor within the Meritocratic Governance System.

Holding Nova Token may also bring about application specific benefits such as exclusive access to premium features in the future.

As the Nova ecosystem evolves, it's likely that new opportunities for utility for the Nova token will present themselves. In these cases, the Nova Governance System will be used to decide and define these changes.

Distribution

Total Supply: 10 million

- Treasury: 27.13%
- Liquidity & Incentives: 31.75%
- Team: 10%
- Fund Raising: 28.81%
- Advisors: 2.31%

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- (b) you will and shall at your own expense ensure compliance with all laws, regulatory requirements and restrictions applicable to you (as the case may be);
- (c) you acknowledge, understand and agree that Nova Token may have no value, there is no guarantee or representation of value or liquidity for Nova Token, and Nova Token is not an investment product nor is it intended for any speculative investment whatsoever;
- (d) none of the Company, the Distributor, their respective affiliates, and/or the Nova Finance team members shall be responsible for or liable for the value of Nova Token, the transferability and/or liquidity of Nova Token and/or the availability of any market for Nova Token through third parties or otherwise; and
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Nova Token: Nova Token are designed to be utilised, and that is the goal of the Nova Token distribution. In fact, the project to develop Nova Finance would fail if all Nova Token holders simply held onto their Nova Token and did nothing with it. In particular, it is highlighted that Nova Token:

- (a) does not have any tangible or physical manifestation, and does not have any intrinsic value (nor does any person make any representation or give any commitment as to its value);
- (b) is non-refundable and cannot be exchanged for cash (or its equivalent value in any other digital asset) or any payment obligation by the Company, the Distributor or any of their respective affiliates;
- (c) does not represent or confer on the token holder any right of any form with respect to the Company, the Distributor (or any of their respective affiliates), or its revenues or assets, including without limitation any right to receive future dividends, revenue, shares, ownership right or stake, share or security, any voting, distribution, redemption, liquidation, proprietary (including all forms of intellectual property or licence rights), right to receive accounts, financial statements or other financial data, the right to requisition or participate in shareholder meetings, the right to nominate a director, or other financial or legal rights or equivalent rights, or intellectual property rights or any other form of participation in or relating to Nova Finance, the Company, the Distributor and/or their service providers;
- (d) is not intended to represent any rights under a contract for differences or under any other contract the purpose or pretended purpose of which is to secure a profit or avoid a loss;
- (e) is not intended to be a representation of money (including electronic money), security,

commodity, bond, debt instrument, unit in a collective investment scheme or any other kind of financial instrument or investment;

(f) is not a loan to the Company, the Distributor or any of their respective affiliates, is not intended to represent a debt owed by the Company, the Distributor or any of their respective affiliates, and there is no expectation of profit; and

(g) does not provide the token holder with any ownership or other interest in the Company, the Distributor or any of their respective affiliates.

Notwithstanding the Nova Token distribution, users have no economic or legal right over or beneficial interest in the assets of the Company, the Distributor, or any of their affiliates after the token distribution.

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