What is

Delta Neutrality and how

is supported by *$WAVAX vault?*

TOPICITY

Delta is simply how much a position's value would change if the underlying asset moved $1.

Mathematically, delta equals dP/dS, where P is the investor's position value and S is the spot price of the underlying asset. The concept of delta originates from derivatives, specifically options, but it can be applied to almost all financial instruments.

Here is a closer look at delta with an example:

- ✔ Alice's portfolio holds 1 Ethereum (ETH) which she bought at $2,000
- ✔ Alice's portfolio has an ETH delta of 1
- ✔ This means that if ETH falls by $1, Alice will incur an unrealized loss of $1
- ✔ Vice versa, if ETH increases by $1, Alice will gain an unrealized profit of $1

A portfolio manager with multiple assets can compute a single figure to be how much the portfolio will move if the benchmark, such as S&P 500, moves by $1.

In this case, the portfolio manager can calculate the beta-weighted delta by computing the individual beta of each stock to the benchmark and solving for the weighted sum of the portfolio delta to the benchmark.

$$\textbf{Beta Weighted Delta} = \beta \times \Delta \times (\text{Stock Price}/\text{Index Price})$$

So, what Is Delta Neutral?

Delta neutral essentially means that one's portfolio has zero deltas to a chosen underlying asset or benchmark of one's choice ($dP/dS = 0$).

Note that delta neutral is always a relative concept dephending on the S chosen in dP/dS. For example, a portfolio with zero ETH delta doesn't necessarily mean it has zero BTC delta too.
Here is a simple example:

Imagine a portfolio that has 1 spot ETH and 1 short ETH perp's position:

- ✔ ETH delta for 1 spot ETH is 1, and -1 for 1 short ETH perp

Ignoring funding costs and price deviations, the overall ETH delta for the portfolio is 0

One question arises: if a portfolio is delta neutral, how does it make money? This is where our recent risk premia article comes in handy, as it proves in more detail how a delta-neutral portfolio generates return from risk premia other than market risk.

Since expanding on Avalanche in June 2022, RoboVault successfully released several new vaults including $USDC, $WETH and $USDt Vaults to supply users the ability to access the higher yields.

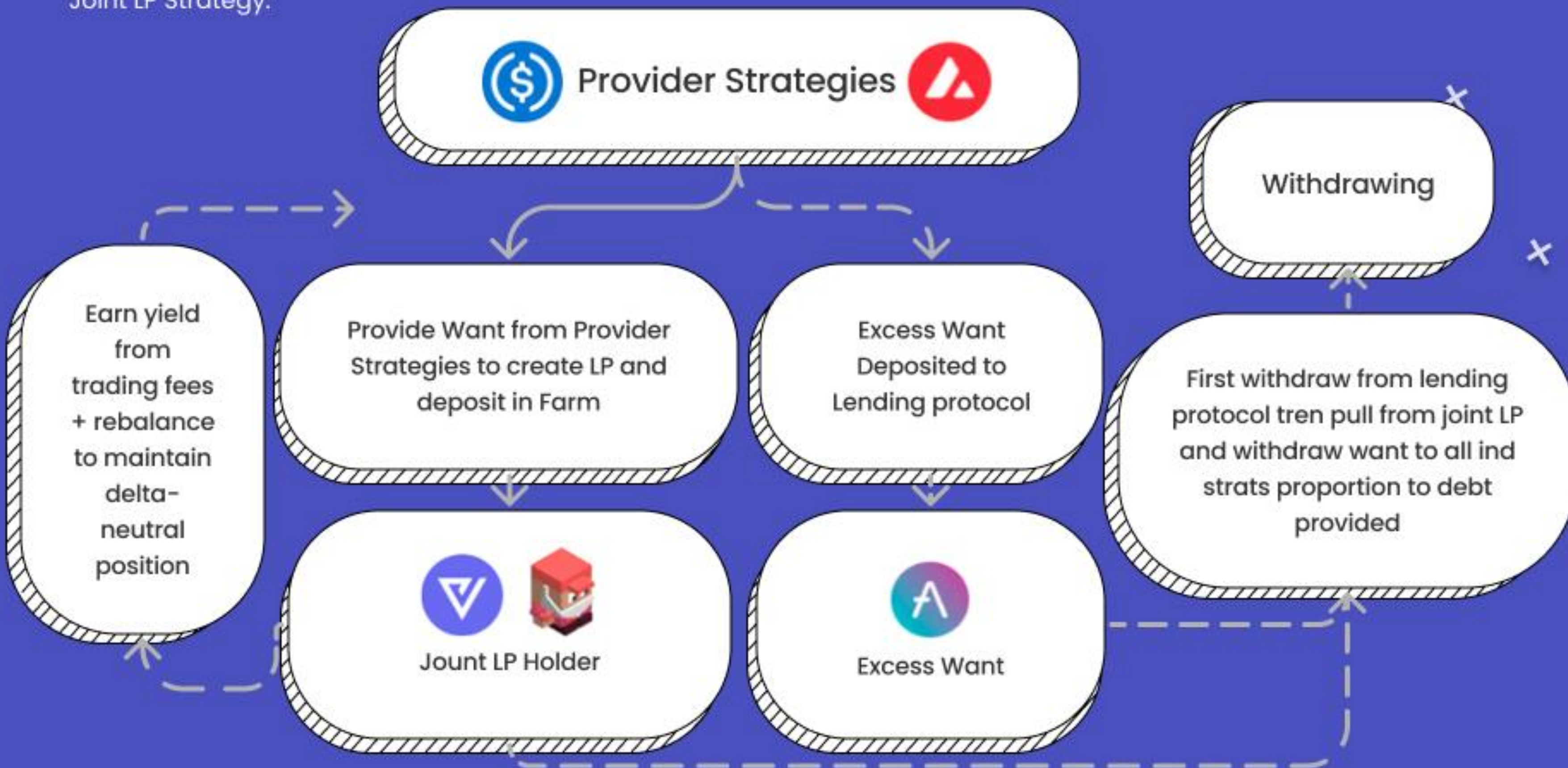
Recently, this yield aggregator continued to launch a new multi-strategy $WAVAX Delta Neutral vault on the Avalanche ecosystem. The strategies are split between 90% Lending Optimizer (supplying to the highest apy lending protocol) and 10% our usual Core Strategy, utilizing AAVE for borrowing $USDC, handsome fees from Trader Joe, and a sweet boost from Vector Finance.

Notable benefits:

- ✔ No withdrawal and deposit fees
- ✔ No lock time
- ✔ IL volatility handled for users

The new $WAVAX vault could be paired with the $USDC vault in the future if it gathers enough liquidity, to form a Joint LP based on internal borrowing, in which case yields would see a boost since we wouldn't have to cover interest rates anymore to external parties.

More Information About Joint LP Strategy:



Joint LP strategies keep a delta-neutral position by using similar mechanics to RoboVault's core strategy. Instead of borrowing a secondary asset, two provider strategies from single asset vaults pool funds to create an LP position that is managed by the Joint LP Holder contract. The LP position earns yield for both provider strategies from trading fees and yield farming rewards. To keep a delta-neutral position and reduce exposure to IL, keepers need to check the LP position and rebalance as needed. This can be considered a more capital-efficient version of its core strategy with higher expected returns.

Capital Efficiency:

Allows for a much higher part of the strategies assets to be distributed to LP (although is dependent on the other provider strategies also combining to create the joint LP)

Liquidation Risk/ Borrowing Cost

By pooling funds from another strategy to create the joint LP, as opposed to using a lending protocol, we avoid any liquidation risk

Gas Costs

Again, by not using a lending protocol rebalances to support the delta neutral position, strategies are much less gas intensive. This is important as it reduces the operational costs of running the strategy and lowering gas costs improves the keeper's reliability.

Additionally, through our Joint LP Strategies, we have the flexibility to utilize several types of LP's that potentially hold more than two assets such as GMX & CRV.

About RoboVault:

RoboVault utilizes delta neutral strategies as well as off chain automation to keep users safe and secure Real Yield on their assets. Launched in July 2021 on Fantom and expanded on Avalanche in June 2022, after more than a year of operation, RoboVault successfully runs single asset deposit delta neutral strategies, supplies users the ability to access higher yields available to Liquidity Providers on Automated Market Makers, while using its own custom off-chain infrastructure to manage risk & protect users from Impermanent Losses.