UNICORNS PROTOCOL

Incentivized liquidity and synthetic asset generation for Binance Smart Chain.

Abstract

The Unicorns Protocol is a liquidity protocol for asset exchange and synthetic asset generation on Binance Smart Chain. The foundation of Unicorns is its liquidity pools, similar to Uniswap, but instead of a fixed-rate fee model it uses a liquidity-sensitive fee model similar to THORChain's slip-based fees. This ensures liquidity demand is always catered for, pool prices are resistant to manipulation and incentives are correct for sustainable minting of synthetic assets.

Synthetic assets are minted by collateralized liquidity pool-shares, which are value-stabilised, yield-generating and can be instantly liquidated to protect against deleveraging spirals. The UNICORNS asset is emitted via a programmatic supply-responsive algorithm that rewards participants and gives way to a sustainable fee market.

Introduction

Unicorns seeks to solve several problems relating to liquidity and synthetic assets. Current automated market-maker (AMM) protocols are susceptible to price manipulation and value-extraction from arbitrage agents, which penalises liquidity providers. Current synthetic asset minting protocols such as MakerDAO and Synthetix use either illiquid collateral, or illiquid markets to liquidate collateral on, which reduces capital efficiency and makes the protocol vulnerable to deleveraging spirals. A deleveraging spiral occurs when the liquidation of a large position causes a depression in asset prices which in turn causes liquidations of more positions. This has happened on MakerDAO several times already.

Unicorns attempts to solve this via an automated market-maker (AMM) protocol, but with the key difference of a single settlement asset and protocol-wide incentives to bootstrap liquidity. In addition, the underlying algorithm uses

Slip-based fees to drive value capture to liquidity providers, which has been discussed and researched at length by the THORChain protocol1. Unicorns also attempts to solve the liquid creation of synthetic assets using collateralized pool shares instead of illiquid collateral, and links them to the pools such that positions can be deterministically priced and instantly liquidated. These ideas have first been researched and discussed by the Vader Protocol2 team, which is a new protocol on Ethereum that attempts to achieve the same outcome.

UNICORNS ASSET (UNIC)

UNIC is used as the common settlement asset in all pools such that they can all be linked and to sense the purchasing power of any asset in its system. UNIC is initially distributed via a fair process of Proof-of-Burn, where participants elect to destroy their previous assets in return for a fair share of the initial 10,000,000 UNIC. This is a sybil-resistant, fair and voluntary process which also creates an asset with unforgeable costliness. Since it is never acquired “for free” by users, such as in other liquidity mining strategies, it has a much more convincing ability to retain value. In addition, UNIC is required as the base asset, as well as the collateral asset, so there is no incentive to dispose of it such as in other

Yield-farming strategies where the yield asset is dumped for the collateral that participants are incentivized to hold.

UNIC has a maximum supply of 40,000,000 units, which it will never reach, via a supply-responsive asymptoting algorithm. In addition, a protocol-level fee burn (from swaps and liquidations) drives down the emission such that liquidity providers and asset-minters are paid a continuous emission. In a way, this drives value from those that demand liquidity to those that provide liquidity.

The remaining 20,000,000 SPARTA is issued to holders of UNIC Liquidity Pool Shares, based on how much UNIC is locked. The supply curve starts at 30% annual emission, reducing to 3% after 1 years:

UNICORNSDAO

The Unicorns Protocol has some aspects that can be influenced by governance, such as fee rates, time factors and an ability to upgrade some parts of the code. This is administrated by a simple contract that allows holders of liquidity token shares to lock up and prove their ownership of the system, then vote on proposals. Once a proposal is passed via majority opt-in, it enters short time-lock before being affected.

Governance is normally low-engagement, so Unicorns attempts to solve this by coupling the distribution of incentives with the participation in the DAO. Members will primarily come for the incentives, but stay for the governance. Liquidity token shares are used, and not UNIC directly, so that capital is always at-risk. This is risk-on governance, where poor governance will directly cause economic loss, and good governance will cause economic gain.

Liquidity Pools

AMM Model

The AMM model uses a liquidity-sensitive fee to maximise revenue for liquidity providers when demand for liquidity is high. This ensures that fees can both asymptote to zero during low demand, but also that during high demand, arbitrage agents have to give up more of their profits to liquidity providers. This counters the value-extraction that normally takes place in liquidity pools.

The algorithm (derived from THORChain3) is:

$$Y = \frac{x*X*Y}{(x+X)}$$

X: input; X: Input Balance;

Y: output; Y: Output Balance;

Liquidity Pool Tokens

When staking, users are assigned an ownership of the pool, represented by a separate asset, given by the equation4:

$$\text{Units} = \frac{(U+T)*(u*T+S*t)}{4*S*T}$$

U: Unic input; U: Unic Balance; t: token input; T: Token Balance;

When removing liquidity, users can claim their fair share of the pool in both assets, or unstake to one side, in which case, the following equation is used (derived from the Vader Protocol5):

$$\text{Asset} = \frac{(s * A * (2 * T 2 – 2 * T * s + s2))}{T 3}$$

S: share of units; T: Total Units;

A: asset balance on the side withdrawing to;

This is the same as unstaking symmetrically then swapping all of one side to the other. This method of unstaking is necessary to allow instant liquidations of assets such that they can cover unhealthy positions.

Synthetic Assets

Synthetic assets are assets that peg to the price of another asset. They are useful for lending, leverage and derivative markets. Fundamentally, there are three agents to cater for:

1. Those who wish to go short the asset, thus will mint it with their collateral, sell it and hope to buy it back for less.
2. Those who wish to go long the asset, thus will buy it, and hope to liquidate minters when the price goes up.
3. Those who wish to provide a market for the asset, and don't care if it goes up or down.

The Unicorns Protocol solves for all three with the use of collateralized pool shares, instant liquidations and pool incentives.

Creating Synthetic Assets

Anyone can create a synthetic asset that has an associated price feed. Price feeds can be both internal to the system, as well as external (such as using Uniswap TWAP price feeds6).

The minter must first be a liquidity provider and own liquidity pool shares. These liquidity pool shares are value-stabilised (they are the aggregate value of their underlying assets), yield-generating (they earn liquidity fees), and can be instantly liquidated (sold to one side), so make ideal collateral assets.

The mechanism to mint is to lock up pool shares and the "liquidity value" of the pool shares is the amount of synthetic asset that can be created. As an example, if liquidity pool shares worth $10k is locked, then up to $10k in a synthetic asset can be created, such as a synthetic stablecoin.

Instant Liquidations

The collateralization of debt is deterministic – it either has the correct amount of collateral, or it doesn't. This can be checked by its "Liquidation Value", which is the instantaneous value of the collateral including a slip-based liquidation fee. If it falls below, then it means the full position can be liquidated, but fail to cover its debt.

However, since when it is liquidated it incurs a slip-based fee, the collateral can actually cover its debt if just part of it is liquidated instead, since both the liquidation and liquidity fee is less. The difference between the amount of liquidated collateral and the debt that was required to be recovered is taken as the liquidator fee.

Positions are liquidated by simply calling a liquidation function, that sells the pool shares to UNICORTN, then buys the asset in its own pool, then deletes it.

Slowly liquidate. This can be seen that if a position was liquidated at its liquidation point all at once, there would be no liquidation fee. However, if it was slowly liquidated over many liquidations, the total sum of liquidation fees is much higher.

Driving Liquidity of Synthetic Assets

The last problem to solve is that synthetic assets need liquidity in creation and liquidity in liquidation. Spartan solves this by minting debt into its own pools, and by paying incentives for the holders of liquidity pool shares of synthetic assets to lock them up to earn rewards. Thus there will always be on-market liquidity of synthetic assets.

These liquidity providers do not care for the price action of the asset, just that they hope it is volatile and there are lots of minting and liquidation events.

Honouring a Peg

Synthetic asset prices stay pegged because of the nature of minting/redeeming of the synthetic asset against its price feed. If the price goes below then debt holders can mint more (more bang for buck), and if it goes above they can sell debt at a premium in order to reduce their own leverage. Thus they are regarded as the buyers and sellers of last resort. Because of this, and the ability for anyone to liquidate a position against the price peg, assets should maintain pegs sufficiently. Price pegs are sought from external sources, such as the Uniswap TWAP, because this prevents deleveraging spirals, where the liquidation of the underlying causes a depression in the price of the underlying, which in turn causes more liquidations. The Uniswap TWAP is resistant to manipulation primarily because it includes a time factor which makes sure information about markets is propagated widely.

Leverage

The minters of synthetic assets can achieve leverage by simply minting, selling it for more collateral, staking, then re-minting again. This should all be done in one action for simplicity. The closer to the liquidation point a minter goes, the more leverage they achieve, and the more likely they are to be liquidated. However, if they are short the underlying then they don't believe their debt will increase in value and they are safe.

Those who are long the asset, should then buy the leverage debt off those who are short and then wait for it to go up in value and liquidate the minter.

Those who are providing liquidity earn fees the entire time, from minting of debt, as well as from liquidations which are done without regard of the slip-based fees, since the liquidator does not need to hold any of the collateral.

Lending Markets

The system can provide a lending market by allowing anyone with any asset to deposit, before borrowing the assets off each other for a fee. If the value of the collateral behind a borrowed asset goes below its value, then the collateral can be liquidated to cover the debt. The fee is dynamic, seeking to achieve a minimum reserve ratio between any two assets.

There does not need to be any governance applied to the selection of which assets can be borrowed, since they are all liquid in their own pools, and all liquidations are done via the pools.

Users will lend and borrow assets to achieve a leverage long/short position on any asset, but this mechanism does not create any new units of synthetic assets, it just seeks to improve capital efficiency of existing assets.

Conclusion

The Unicorns Protocol is a wholesome and complete protocol that allows the safe growth of synthetic assets, lending markets and for all assets to be liquid and productive. A small amount of governance is necessary to manage the upgrading of contracts and the tweaking of some of the protocol's parameters. The governance process is at-risk such that there is a direct link between healthy and effective governance and the value of exposed collateral. The unicorns Protocol borrows ideas from Uniswap, THORChain, Synthetix, MakerDAO and Vader/Vether Protocol, but will be launched on Binance Smart Chain as its own separate protocol.

Token Utility

The utility of the token is two-fold;

Governance: UNIC token holders will be able to vote on product features, token utility, types of auctions and even decide which projects will be added or featured on the platform.

Fees: Transaction fees will be paid in $UNIC

Other forms of utility include the following:

Yield Farming, Smart Swapping, and Margin Trading

Farming pools, swapping, and trading on the Unicorns Protocol Platform will incur a fee deducted in $UNIC. Liquidity providers will receive APY (Annual Percentage Yield) in $UNIC when joining the corresponding pools.

Governance

The Unicorns Protocol governance ecosystem aims to build a solid and sustainable protocol for development and usage. UNIC holders will be able to vote for ecosystem initiatives, new features and development, liquidity rewards distribution specifications, and other applications.

UNIC holders need to stake $UNIC to be able to vote and to submit proposals. Proposals will be first discussed off-chain on the Unicorns Protocol governance platform. The idea of this pre-voting mechanism is to promote proposal discussion before on-chain submission.

Once the proposal is ready to be submitted, there will be an on-chain vote. Every winning proposal is then reviewed and applied by the Unicorns Protocol development and management team.

Token Distribution and Allocation

Total Supply:

40,000,000 UNIC on the Binance Smart Chain

Total : 40,000,000 UNIC

Development and Tech : 4,000,000 UNIC

Margin Liquidity Rewards : 12,000,000 UNIC

Team : 1,000,000

Yield Farming : 9,400,000

Marketing and community : 1,200,000

Binance Exchange Staking : 60,000

Other Exchanges Staking : 300,000

Referrals : 1,600,000

Partnerships (staking & yield farming) : 3,200,000

Insurance : 3,200,000

New Products : 4,040,000

Team token allocation will have a 6 months total locking period with a portion unlocked each month from Token Generation Event. This way Unicorns Protocol ensures that all the proposed features are realized and helps to avoid early dump

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Grigory leads the development of the group's strategy. With nearly two decades of experience gained in information technology and management consultancy, he has advised multinationals on strategy, digitalisation and implementation of emerging technology, operational performance and efficiency.

Grigory designed and built blockchain infrastructure allowing real-world asset tokenisation. He has advanced degrees in mathematics and economics, holds an MBA from the Open University Business School, and took courses in disruptive strategies at Harvard University.
Grigory was an early adopter of cryptocurrencies and passionate about promoting adoption of blockchain technology and crypto amongst non-technical users through simple and easy interfaces.