Vires In Numeris

Automated CDP Sentinel

Who we are

Vires In Numeris

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Blockchain Engineer

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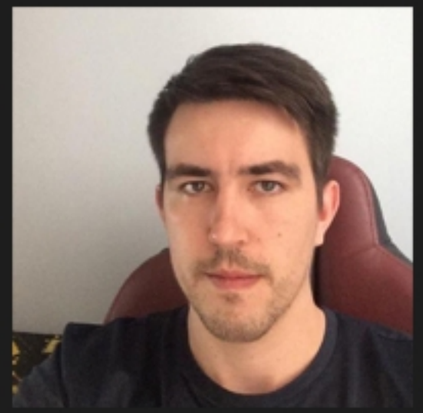
Product Design



Aleks Bakimatov

Front-end

What we have built

Protect your CDP while sleeping.

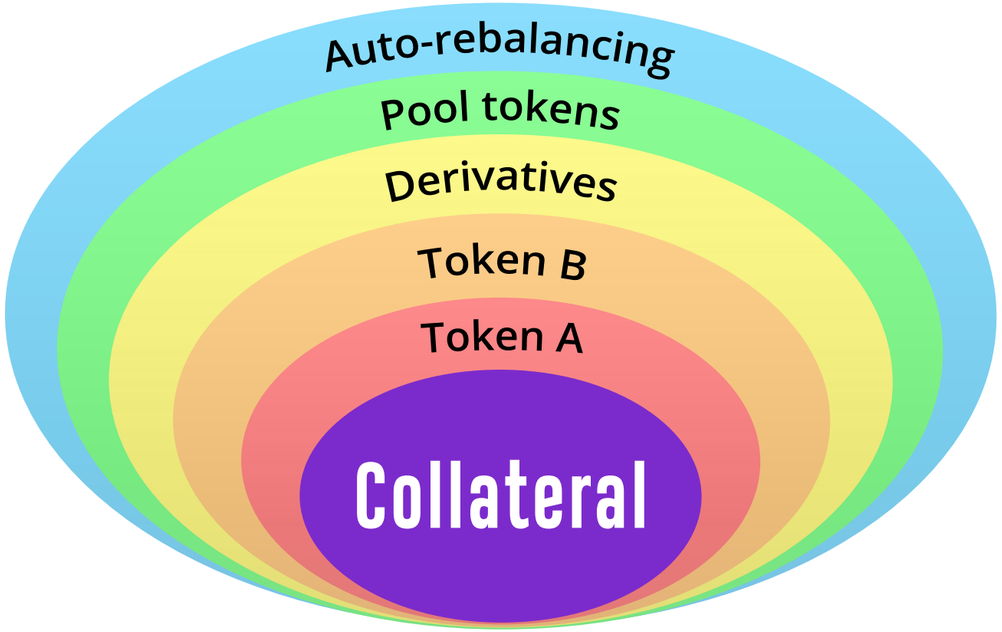
A service that automates CDP protection using user's tokens as a fuel. When collaterization level drops, we use layers to recover desired ratio

Core concept is Layered CDP Protection that allows users to set up and arrange tokens from his wallet that’s used to automatically recover desired collaterization ratio whenever there is a danger of liquidation.

(using AAVE and Uniswap flashloans)

Layered CDP Protection

Adjustable layers



How It Works

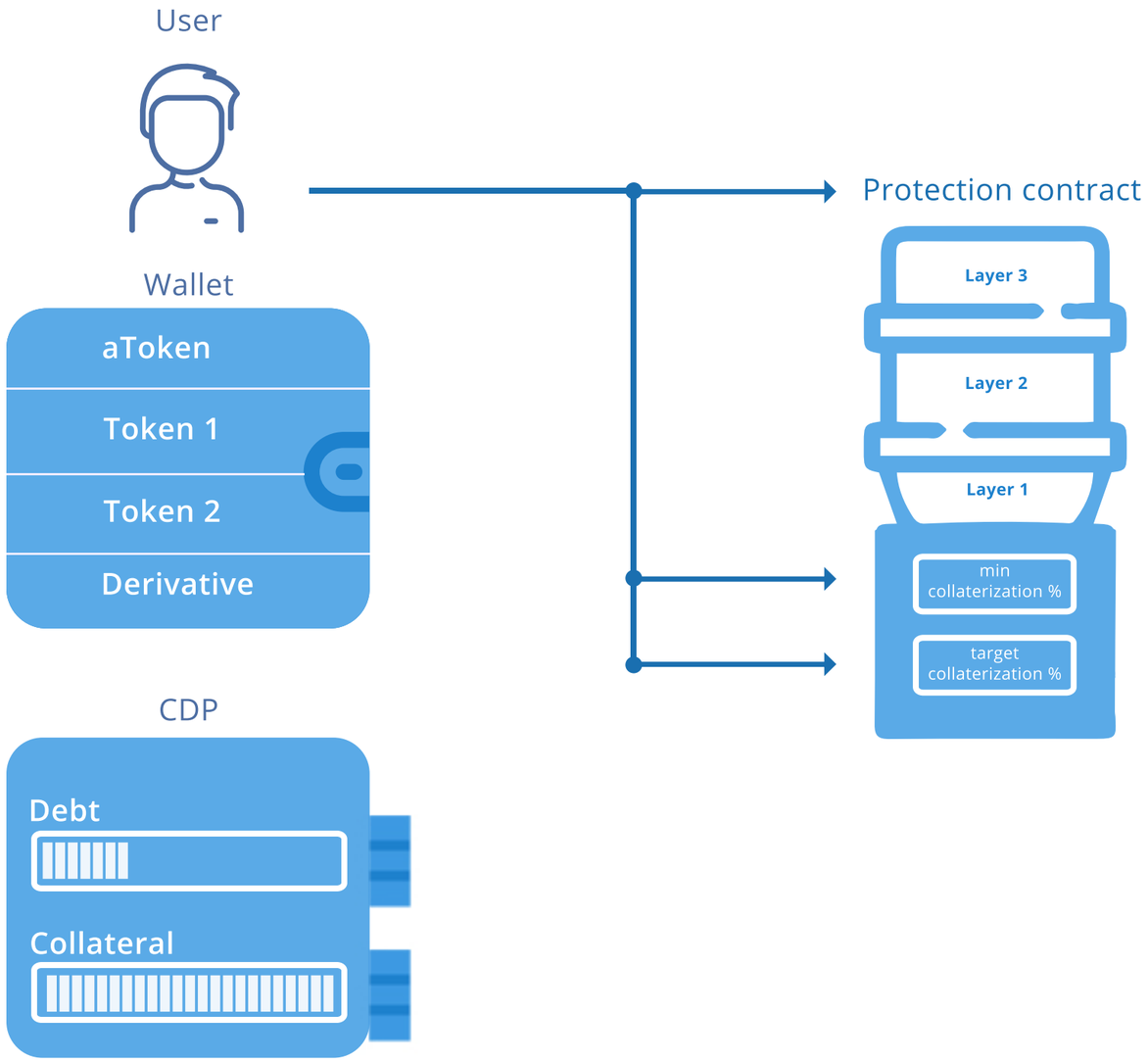
Step 1

A user wants to ensure that CDP will not be liquidated while he sleeps, at the cost of some of his tokens.

How It Works

Step 2

The user generates Protection Contract from the factory, sets up OPERATOR_ADDRESS (required for automation), MINIMAL_COLLATERIZATION and TARGET_COLLATERIZATION.
He/She also approves collateral token (e.g. aTokens) for the contract, to rebalance CDP.

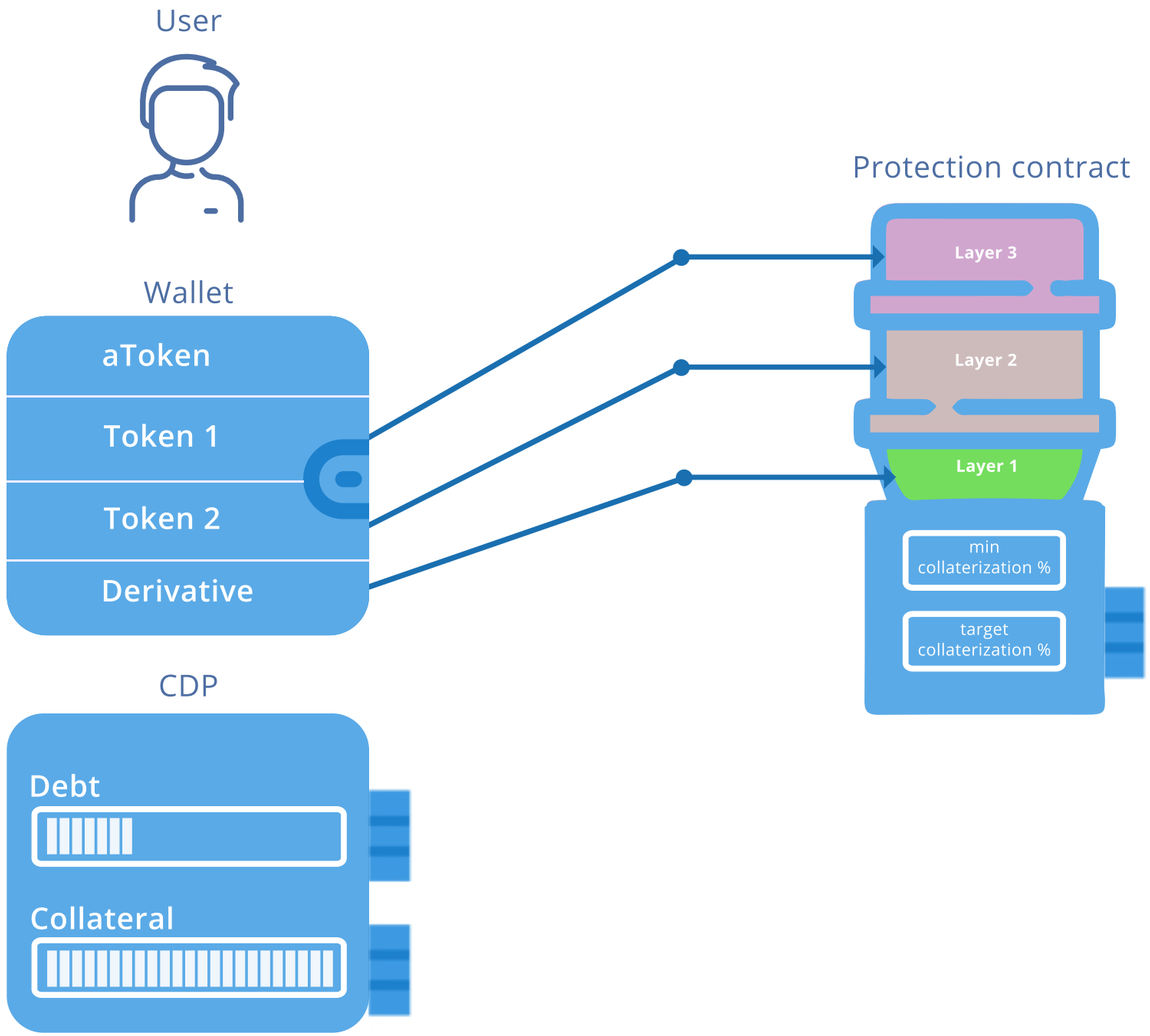


How It Works

Step 3

The user decides what tokens are going to be used as a protection layer, determines desired liquidation order and approves them for Protection Contract.

Note that tokens remain on the user's wallet.

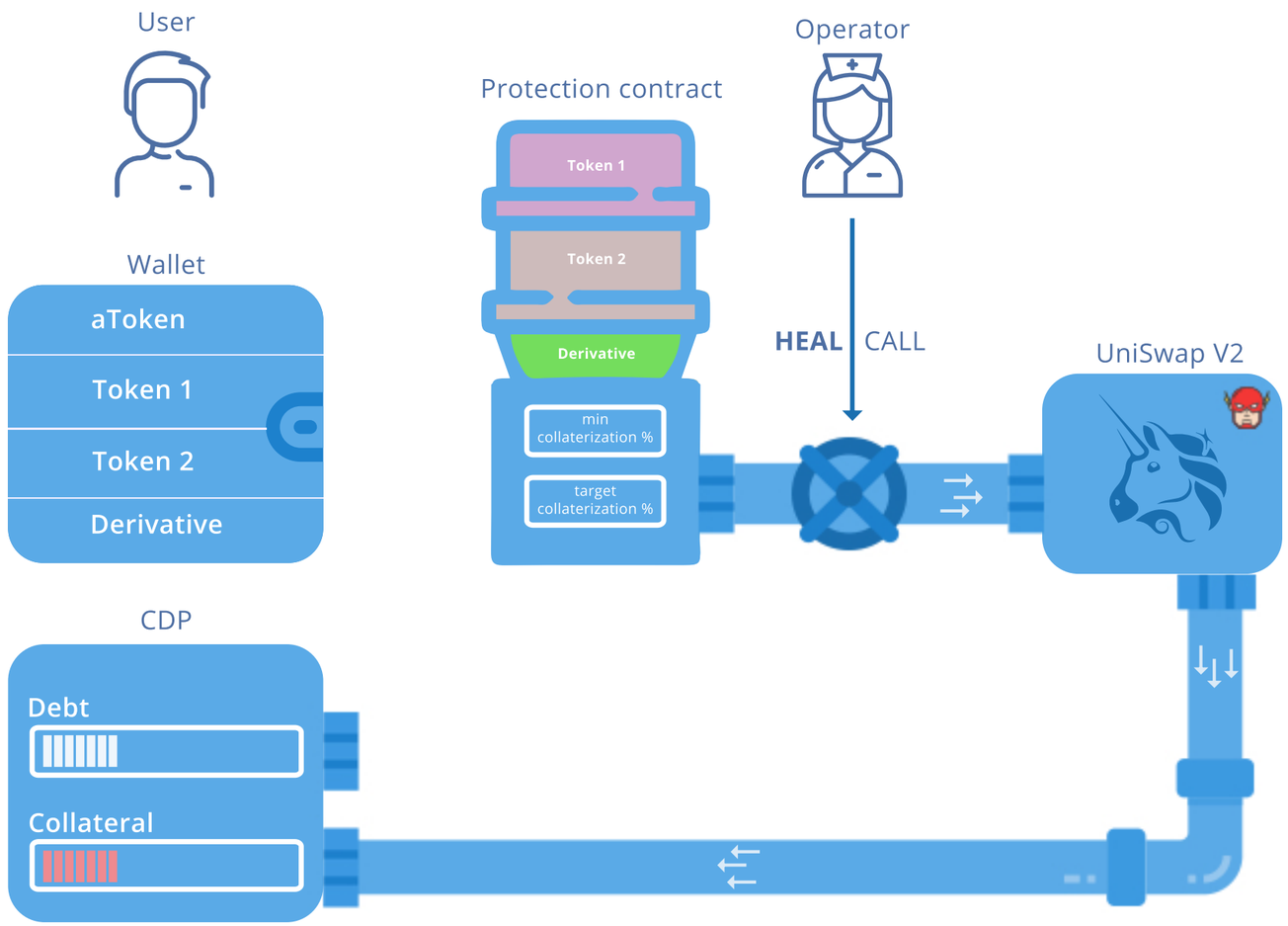


How It Works

Step 4

When collateralization level drops below MINIMAL_COLLATERIZATION - CDP recovering becomes available, so OPERATOR(automation service provider) is now able to call HEAL method to liquidate the required amount of tokens from user's wallet, to restore collateralization level to TARGET_COLLATERIZATION.

If layered tokens run out - rebalance mechanic that sells part of collateral to repay the debt will close the gap.



How It's Made

Protect your CDP while sleeping.

- Two key pieces: Smart-contracts, web app.
- Designed protocol from scratch
- Developed smart-contract on top of AAVE Protocol that implements Automated Layered CDP Protection concept.
- Implemented layered tokens liquidation via **UniSwap V2** DEX
- Implemented CDP rebalance mechanic for **AAVE** protocol using **UniSwap V2** flashloans

Demo

Usecases

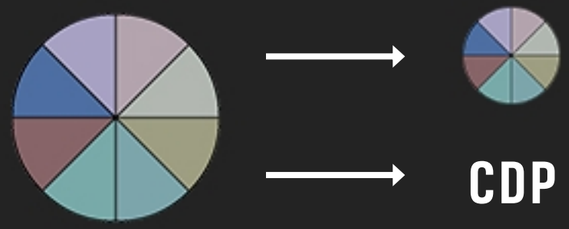
Protect your CDP while sleeping.

I

Derivatives: If Alice holds Opyn put options it’s obvious to use them as protection layer because they grow as ETH drops

II

Pools, sets, portfolios - DeFi users like uniswap and balancer pools and they want to use them as protection layer



III

Somitemes you don’t have tokens for selling.
So you sell your collateral and pay your debt, repeat 5 times.
Flashloans to the rescue! You can use rebalancing in manual and automated modes

Future Work

Protect your CDP while sleeping.

- Go to mainnet!
- Add support for different collateral and debt tokens
- Add support of other CDP services
- Add more defence!

Check it out live

Protect your CDP while sleeping.

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Thank you for your attention

We appreciate the challenge this Hackathon brough to us