BREAKCHAIN PROTOCOL

Whitepaper

May 2022

Table of Contents

Authored by:
Joe Pizzurro & Ted Brinkofski

Challenge

The goal of the BreakChain Protocol is to build a stable reserve asset. Most crypto currencies are volatile and lose their value over time. Stablecoins aren't volatile, but they're pegged to a fiat currency that's losing more than 8% of its value every year due to high inflation. In a rapidly changing economy, investors need assets that will maintain their value and independently retain purchasing power.

The BreakChain Protocol achieves price stability by creating incentives for investors. The two core features of the Protocol are Staking and Bonding. Through Staking, investors are rewarded for reducing selling pressure. Stakers deposit their XCHAIN into the protocol, which contributes to XCHAIN's long-term price stability. In exchange, stakers receive additional XCHAIN token rewards as well as the right to govern the protocol. When more users stake their XCHAIN, less XCHAIN is sold.

Users can stake their XCHAIN by going to the BreakChain app and going to the STAKING section. The APY shows the real rate of return for 1 year of staking. Investors receive sXCHAIN for every XCHAIN staked. sXCHAIN represents how much the investor has staked. Rewards are compounded, and investors are paid out every rebase, which happens 3 times per day. When the staker unstakes, sXCHAIN leaves their wallet and the staker receives their XCHAIN.

Through Bonding, the community builds the reserves backing the Treasury. Bonding allows you to trade various tokens for XCHAIN at a discounted price. In exchange, bond sales provide additional liquidity and reserve assets to the BreakChain treasury, contributing to the stability of the protocol. As a result, 99% of all liquidity in the treasury is owned by BreakChain.

Investors can buy Bonds by going to the BreakChain app and going to the BONDS section. The Bond Price shows how much they must pay in order to receive 1 XCHAIN. When the Bond Price is less than the market price of XCHAIN, the user can buy a bond and receive XCHAIN at a discount. Every bond purchase has a vesting period, which determines when the investor can redeem their XCHAIN. As of now, the vesting period is 5 days. This means that when an investor buys a bond, they must wait 5 days before they can redeem their XCHAIN. By buying a bond at discount, the investor funds the BreakChain treasury and receives XCHAIN at discount which can then be sold at a profit or staked for more rewards. When the Bond Price is greater than the market price of XCHAIN, the real rate of return is negative and the user is better off buying XCHAIN on the market.

Solution

The BreakChain Protocol is deployed on the Polygon Network. Polygon is a Proof-of-Stake (POS) sidechain that runs parallel to the Ethereum network. The Polygon network allows you to do many of the same things the main Ethereum network allows, but with fees that are often a fraction of a cent. The native currency for the Polygon network is MATIC. To use the BreakChain Protocol, you must pay transaction fees using MATIC. By using Polygon, the BreakChain community will see faster transactions and pay less in transaction fees, therefore making the protocol more accessible to the regular investor.

The primary reserve asset in the Breakchain Protocol is USD Coin (USDC). This ERC20 token is a type of cryptocurrency that is referred to as a stablecoin. You can always redeem 1 USDC for US $1.00, giving it a stable price. Each USDC is backed by one dollar or asset with equivalent fair value, which is held in accounts with US regulated financial institutions. You can buy USDC on most centralized and decentralized exchanges across the crypto ecosystem. USDC is the brainchild of CENTRE, an open source technology project bootstrapped by contributions from Circle and Coinbase. Compared to UST, USDC is regularly audited. Unlike DAI, USDC is collateralized with US dollars and short-dated government obligations off-chain.

Features

The core of the BreakChain protocol is the Treasury. The Treasury holds the reserve assets and is responsible for minting XCHAIN. On the periphery of the Treasury is the Bond Depository and the set of contracts used for Staking. Every reserve asset will have its own Bond Depository and set of rules for determining the Bond Price and vesting periods. At any point in time, the BreakChain protocol could create another Bond Depository and create another reserve asset. When a bond is purchased, the Bond Depo facilitates the movement of assets from the user to the Treasury, and the Treasury mints XCHAIN for the user.

The Staking feature is facilitated by the Staking and Distributor Contracts. XCHAIN is the only asset investors can stake, and this won't change as the Protocol evolves. When the investor Stakes any amount of XCHAIN, the contract records the investor's information and uses this to distribute the future rewards. Anytime an investor Stakes, this triggers a Rebase. A rebase evaluates the protocol's reserves and staked assets and adjusts the total supply and the amount for each user. During the rebase, the Distributor calls the Treasury and mints more XCHAIN and issues rewards to the stakers.

The Airdrop feature will allow any user staking their XCHAIN to receive additional rewards. At any time, the BreakChain protocol may issue an airdrop for any amount. To qualify for this, the user must currently be staking their XCHAIN. The user can see the Airdrop rewards they qualify for by going to the REWARDS section of the BreakChain app. If the amount is greater than 0, the user can redeem their rewards.

The BreakChain Protocol is community driven and holders of XCHAIN can create and vote on proposals that govern the protocol. The community will determine how much XCHAIN is required to submit proposals and this can change over time. Each XCHAIN represents one vote, and each proposal needs majority approval for it to be considered. In the future, the community may vote on what reserve assets and Bond Depositories are created. The community may also determine the funding rates for staking and how the Treasury invests its reserves.

Technology

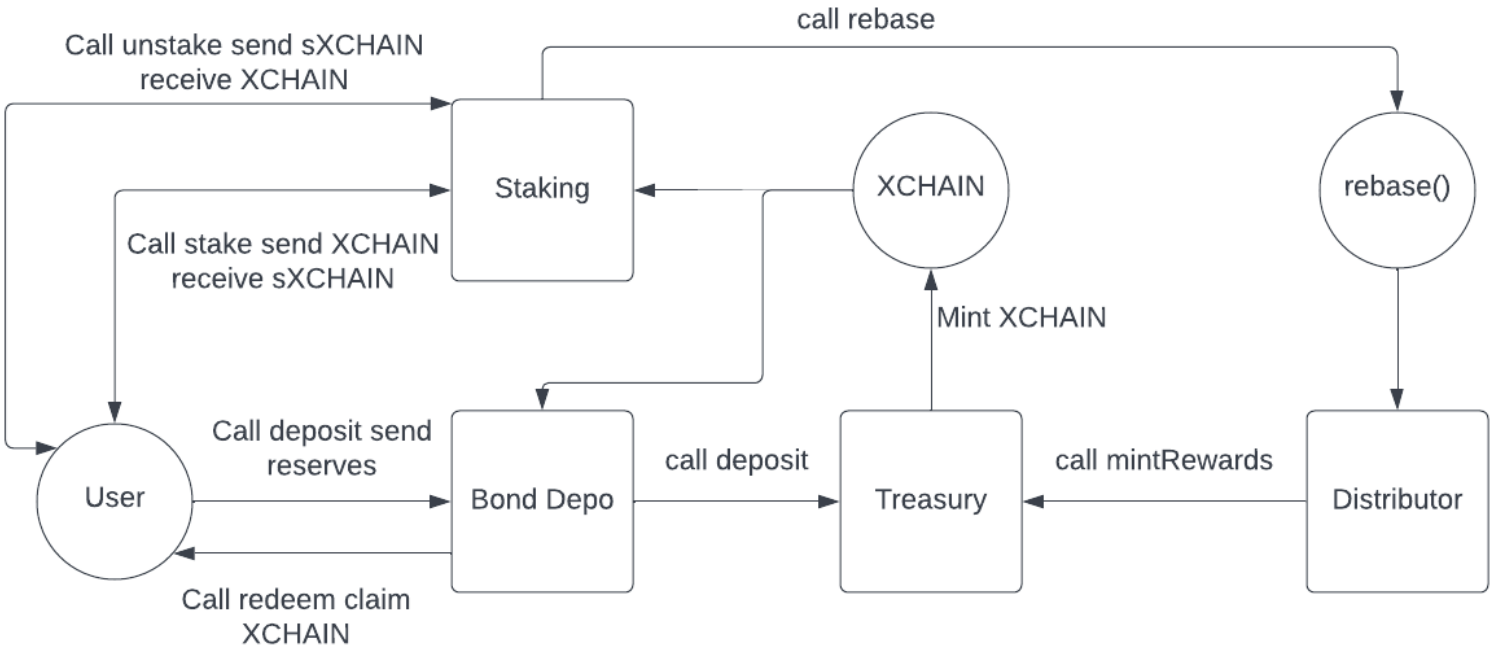
The BreakChain Protocol is driven by smart contracts deployed on the Polygon Network. Since Polygon is EVM compatible, smart contracts are written using the Solidity programming language. There are more than 10 smart contracts facilitating the critical operations of the Protocol. Users can interact with these smart contracts using the BreakChain front end accessible at breakchain-protocol.money. Since BreakChain is a web3 application, users aren't required to use the front end, and can write their own scripts or use the UI provided by a blockchain reader like polygonscan.com. The BreakChain front end is built using React and Typescript.

The BreakChain Metrics API reads values from the Smart Contracts and creates metrics for the frontend that inform users about prices and rates of return. The API is written in Python and uses the web3.py library for querying the blockchain. The app is deployed on an AWS EC2 server and contains a few APIs the front end can call in order to receive metrics.

Architecture

The BreakChain Protocol front-end and metrics API is deployed using AWS micro services. The front-end utilizes AWS Amplify and enables low cost and scalable services. As the community grows and more web traffic visits the application, AWS Amplify will auto-scale and make sure the Protocol stays online. Amplify is integrated with Github and creates a continuous deployment pipeline that re-deploys the front-end application whenever code is committed to the main branch. The Development Server is hosted on Heroku and works similarly to AWS Amplify. Whenever code is committed to Github, the dev server redeploys and enables a continuous feedback loop. The Metrics API is deployed on an EC2 instance that can be scaled as the application grows. As more traffic visits the web application, more API calls will be made for metrics to populate the front end. AWS API also has auto-scaling features that can handle a high throughput of requests from the front end. The API application is programmed in Python using the Django framework.

The smart contracts are deployed and tested using Hardhat. Hardhat has become the most popular and effective tool for developing and deploying Smart Contracts because it enables local debugging of Solidity code and logic. Hardhat deploy grabs the constructor arguments for each smart contract and deploys them on the network specified. Hardhat scripts are used to update the smart contracts and create the necessary state for the Protocol to function properly.



Real Estate Tokenization

Tokenization is the process of creating a digital token that represents a real estate asset or interest in a real estate portfolio.

One of the biggest challenges for real estate investments is that they are illiquid compared to other asset classes. Tokenization solves this problem by allowing investors fractionalized ownership of real estate in the form of tokens that can be sold or traded independently of the asset itself.

The vision is for XCHAIN to eventually be backed by real estate assets in addition to stablecoins. Real Estate is a hard asset with intrinsic value and will always be a more stable reserve asset than fiat or cryptocurrency.

The Protocol will purchase a real estate asset and then create a new token that represents shares of this asset. The new token would then become an additional reserve asset for XCHAIN. Investors would be able to purchase the new token(s) in order to own a piece of the real estate asset, or they could simply purchase XCHAIN and continue to stake it and earn yield (knowing that their investment is backed by real estate).

*Tokenization is on our roadmap for release in 2023

Learn More

Website
breakchain.money

Web App
breakchain-protocol.money

Medium
breakchain-protocol.medium.com

Twitter
Twitter.com/breakchainx

Facebook
Facebook.com/breakchainx

Telegram
t.me/+HQItttSpH29iZWIx

Github
github.com/breakchain

Roadmap
breakchain-docs.s3.amazonaws.com/XCHAIN_Roadmap.pdf