Making life easy for yield farmers

Arable is the first decentralized synthetic farming protocol, making multichain farming and trading accessible and convenient for everyone. Multichain yields on a single chain using a unified user interface become possible.

At Arable you enjoy fast and low-risk 'crop rotation' between farms. To move funds between farms takes only a few clicks. You are always in control!

Multi-chain becomes convenient and accessible, removing common hurdles such as cross-chain bridging and unpredictable DEX fees and slippage. Trading between assets does not incur any slippage and always involves a predictable flat fee percentage.

Farmers looking for the highest yields are often active on multiple farms and chains. Usually, that takes quite a bit of effort and is costly. Multichain farming involves bridging funds across chains and requires many steps swapping from token A on chain B to token Y onto chain X. At Arable, you avoid bridging altogether, saving on time and paying fewer fees. Since there is no slippage when repositioning funds, you avoid any risks associated with price volatility.

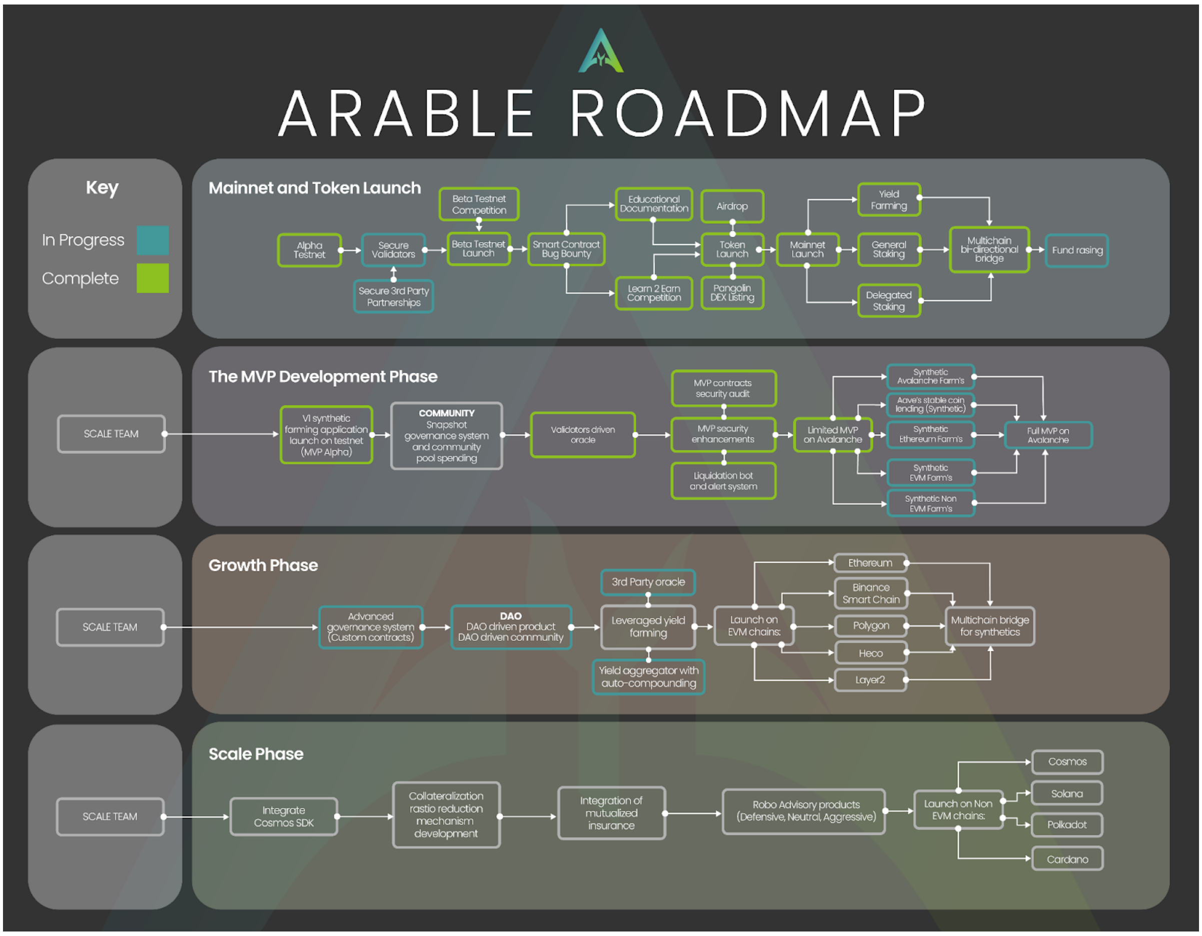
At Arable multichain farming is done in a single app on a single chain and it is easy to keep an overview of all your farming activities. The complexity of managing multiple farms and employing involved strategies is greatly reduced.

Be part of something revolutionary, join us at our socials: Discord, Twitter, Telegram

Launch Phases

The platform will launch in incremental phases, with a new set of features and capabilities added at each stage:

- Mainnet and Token launch
- MVP phase
- Growth Phase
- Scale phase



Updated: Jun 28 2022

State of the project

When did we begin the development of Arable?

Work on Arable started in August 2021. For a short history of the becoming of Arable, you can read [The Origin Story] on Twitter.

What is the state of MVP features development?

- MVP contracts have been audited by [Solidity Finance]
- Public lunch is on July 6th, 2022

What features are planned for Arable MVP?

- We will introduce synthetic assets and synthetic farms
- Minting of arUSD will be enabled
- Farming and trading of synths will go live

- Validators will provide oracle services for asset price data and reward rates for synthetic farms.

What collateral options are available at the launch of MVP?

Collateral assets	**Collateralization ratios**
USDT	200%
FRAX	200%
YUSD	200%
AVAX	300%
ACRE	400%

What synthetic assets are available at the launch of MVP?

arBTC, arETH, arBNB, arSOL, arAVAX, arMATIC, arATOM, arOSMO and arEVMOS are available at launch.

Are you planning an audit or code review?

Solidity Finance has successfully audited Arable's contracts. Our GitHub contracts repository contains all audit reports.

The contract's security is of the utmost importance. As a result, we have an ongoing bug bounty program with rewards ranging from ten thousand to one million ACRE. You can learn more about the bug bounty program in this Medium article.

We are allowing several external individuals to audit our contracts in addition to the services of Solidity Finance's excellent team. It is also planned to collaborate with Code4rena in the future.

Bug Bounty Program

The contract's security is of the utmost significance. As a result, we have an ongoing bug bounty program with awards ranging from ten thousand to one million ACRE. In this [Medium blog], you may learn more about the bug bounty program.

General Concepts

What are synths?

Synths are synthetic cryptocurrency derivatives that track the price of their native-chain equivalent. Existing examples of synthetic cryptocurrencies outside of the Arable protocol are stable coins like USDT (Tether) and USDC or Synthetix's sUSD.

The synth's name is composed of the prefix "ar" and the name of its native chain counterpart that it tracks. Examples are arETH tracking ETH on Ethereum and arSOL tracking SOL on Solana.

What are synthetic farms?

Synthetic farms are a new concept and unique to Arable. Arable provides synthetic farms that follow the APR of existing farms on other chains and offer the same rewards as synthetic tokens. This gives easy access to multichain yield on a single chain in a single UI.

What is arUSD?

arUSD is a stable coin that is pegged to the price of the United States Dollar. arUSD is minted by depositing collateral and serves as the onboard ramp to purchase synths in the Arable app which can then be traded or farmed and sold back to arUSD at any time.

Is Arable a fork of Synthetix?

No, Arable is built from scratch, although we use a similar mechanism for collateralization and pooled debt.

What is ACRE?

The utility functions of Arable's native token ACRE are

- Governance token of the Arable protocol
- Fee token for using the protocol

- Reward tokens distributed to validators, liquidity miners, delegators, and stakers.

What is (general) staking at Arable?

By general staking, you lock your ACRE tokens with the protocol over an extended period of time and receive ACRE tokens as a reward. This is a low-risk way of earning ACRE.

What is delegated staking at Arable?

Delegated staking is the process of staking ACRE with a trusted validator. In exchange for locking their ACRE with a validator, delegators earn a percentage of the validator rewards. Operating a validator can be time-consuming and takes a lot of experience and technical know-how. By delegating, you are helping to secure the Arable protocol and support the validator maintenance without having to maintain a validator node yourself.

How often can I claim ACRE rewards?

One epoch equals 24h. That means you can claim ACRE rewards once a day.

What are the unbonding/unlocking terms?

If you decide to unstake your ACRE there is an unlocking period to ensure the stability and security of the protocol.

The unbonding period for general staking, delegated staking, and liquidity mining is the same: 14 days. You will not earn any rewards during the unbonding period. You can find an overview of all assets in the state of unbonding in the Unbondings section of the Arable app.

What is farming?

The most common yield farming opportunities out there are LP farms and staking farms. These types of farms fundamentally allow a user to deposit cryptocurrency into smart contracts.

The rewards these farms pay fluctuate depending on market and protocol conditions. Active farmers typically follow a strategy involving multiple farms, always hunting for the greatest returns. One of those strategies is called “crop rotation" where the farmer constantly swaps cryptocurrencies to farms that provide the best rewards.

The contracts for these farms, which we will call native-chain farms from here on, are on many different networks like Avalanche, Solana, and Ethereum. Moving funds between native-chain farms can quickly become time-consuming, complex, and costly among other issues.

What is synthetic trading?

Synthetic trading involves the purchase of synthetic assets, trading on Arable's zero slippage DEX for a flat fee percentage. As an example, if traders are bullish on Ethereum they can purchase the synthetic version of Ethereum arETH without worrying about high gas fees if they were to purchase natively on the Ethereum chain.

Yield farming/Liquidity mining

What is yield farming/liquidity mining?

You provide liquidity to a 3rd party DEX like Pangolin for a supported token pair and stake the acquired LP tokens at Arable for extra ACRE rewards. LP tokens can be thought of like a receipt for providing liquidity.

By staking the LP tokens, the liquidity provider is incentivized to keep the liquidity in the pool of the DEX, ensuring sufficient liquidity for swapping actions.

What is the difference in risk profile compared to general staking?

Liquidity mining can expose you to impermanent loss, but general staking does not. That means that general staking is less risky than liquidity mining.

Synthetic and Organic Farming

What is a synthetic farm?

Similar to synths, that track the price of native chain assets, synthetic farms track their native-chain counterpart. Synthetic farms pay the same rewards as the native chain farm in their synthetic equivalent.

For example, staking synthetic Osmosis ATOM/OSMO LP tokens will yield synthetic arOSMO tokens. These tokens can be swapped into any other synth at the Arable DEX or swapped to arUSD, which can be exchanged for any native chain cryptocurrency at a 3rd party DEX like Pangolin.

What is synthetic farming?

Synthetic farming lets you engage with synthetic farms that track their native-chain counterpart. Synthetic farming offers many advantages to native-chain farming like

- multichain yields on one platform
- no bridging fees
- no slippage dex
- managing all assets in one place

and many more.

Why should I use synthetic farms?

Farming on native chains

Moving funds between native-chain farms typically involves many steps like swapping tokens and bridging. This can become complex quickly and create issues like slippage and delays due to network congestion, failed transactions, and high fees. This only gets exacerbated when involving multiple networks and cross-chain bridging is required.

All of this is unpredictable depending on the condition of the involved networks at the time.

Synthetic farming

Farming at Arable is easy, safe, and frictionless. You can engage with multiple farms without leaving the Arable ecosystem. You can employ the most complex farming strategies with very little overhead and predictable fees.

Swapping synths at the Arable DEX is

- cheap with a flat 0.3% fee for synthetic assets of multiple chains
- instant

- always with zero slippage
- simple, no bridging required
- reliable, with no failed or delayed transactions caused by native-chain conditions

There really is no contest between synthetic and native-chain farming, Arable is the sensible choice in every regard.

How does Synthetic and Organic Farming relate to each other?

Organic farmers (minters) make synthetic farming possible because they supply liquidity to the Arable protocol. Every organic farmer starts by minting arUSD (a stable coin pegged to USD), allowing synthetic farmers to swap and farm other synthetic cryptocurrency derivatives such as arSOL (the synthetic version of SOL) and a variety of LP token derivatives. This allows synthetic farmers to purchase arUSD and swap it for any supported synthetic asset (synth) at the Arable DEX (M.Swap) and stake the synths at any of the available farms for native farm equivalent yields.

The Organic Farmer

The organic farmer provides the “raw materials” (asUSD) for the synthetic farmer to buy other synths and participate in yield farming on synthetic farms at Arable. This type of farmer is called “organic” because his farming style will lead him to take the minted arUSD outside of the Arable ecosystem onto native chains. In contrast, the synthetic farmer will mostly stay within Arable.

The organic farmer is an explorer, traveling to foreign ~~lands~~ chains, scouting profitable opportunities such as providing arUSD liquidity at a DEX like Pangolin or swapping their arUSD for native tokens and crossing over to other chains and engaging with native farms there.

The Synthetic Farmer

The synthetic farmer stays mostly in the Arable app, enjoying zero slippage when swapping between different synthetic cryptocurrencies and easy access to a variety of farms all in the same app. Synthetic farmers can relax in the knowledge that they never have to bridge funds between chains again or have to get comfortable with yet another protocol's user interface or chains peculiarity.

They have a variety of farms right at their fingertips and have a centralized overview of all their (farmed) assets right in the app without having them scattered over multiple protocols, chains, and or wallets.

What is an example scenario of how the actions of synthetic and organic farmers affect each other and what are the potential risks and rewards?

In the first scenario, we follow the journey of Jack, the organic farmer, and Jill, the synthetic farmer.

Jack & Jill

Jack the organic farmer:

1. Jack provides 200 USDT collateral
2. The collateralization ratio for USDT is 200%, which means Jack mints 100 arUSD. He starts earning ACRE rewards.
3. Jack takes the 100 arUSD and adds them into the arUSD/USDT liquidity pool at the Pangolin DEX and receives LP tokens in return.
4. Jack stakes the PGL tokens at Arable, which earns him ACRE rewards.

Jill the synthetic farmer:

1. Jill buys ten arUSD at the Pangolin DEX
2. Jill buys the synthetic ATOM/OSMO LP (synth) at the Arable synth DEX.
3. Jill decides to stake the synths at the synthetic "ATOM/OSMO LP" farm. She receives the same rewards as farming on the native Osmosis chain. In this case, arOSMO, which is the synthetic version of OSMO.
4. Jill claims her rewards regularly and compounds them back into the farm, which increases her reward yield.

Jack's potential rewards and risks

Jack profits:

- as the holder of arUSD/USDT LP tokens, he profits from fees when Jill buys arUSD at the Pangolin DEX
- by earning a share of Jill's swapping fees at the Arable DEX
- by earning a share of fees when Jill claims farming rewards

- if the value of the underlying assets of Jill's synths (ATOM/OSMO LP and OSMO) goes *down*. This reduces system debt. Jack can mint more arUSD or take out collateral, up to his required Risk Ratio of 100%.
- from generating ACRE rewards by maintaining a healthy Risk Ratio
- from generating ACRE rewards by staking the arUSD/USDT LP tokens.

Risks for Jack:

- If the value of the underlying assets of Jill's synths (ATOM/OSMO LP and OSMO) *rises*. This increases the System Debt and in turn Jack's Current Debt. As the debt rises, so does the Risk Ratio for Jack. The Risk Ratio is the ratio between the value of the deposited collateral and the minted arUSD expressed as a percentage. A Risk Ratio of 100% or below is healthy. Jack can burn arUSD or add more collateral to reach his required RIsk Ratio. If he fails to do so within a grace period, Jack risks liquidation.
- Rewards paid out to Jill for synthetic farming are paid by increasing System Debt. This affects Jack's Current Debt proportionally to his share of all minted arUSD. This also negatively affects Jack's Risk Ratio.
- Risk of impermanent loss by holding arUSD/USDT LP tokens.

Jill's potential rewards and risks

Jill profits:

- by continuously earning rewards from staking ATOM/OSMO LP with the synthetic farm. The farm's APR follows the equivalent native chain farm's APR. She earns reward tokens in the synthetic equivalent, in this example arOSMO
- if the underlying asset of the synthetic LP token *gains* in value
- if the underlying asset of the rewards token, OSMO, *rises* in price.

What are Jill's risks and costs?

- She is exposed to the risk of the price of the underlying assets of her synths (ATOM/OSMO LP and OSMO) going down.
- Risk of impermanent loss.

Minting

What is minting?

In the context of the Arable protocol, Minting refers to the borrowing of arUSD via an overcollateralized loan.

To mint arUSD, minters first deposit collateral in the form of supported cryptocurrencies like USDT, ACRE, or AVAX. Minting is over-collateralized. Over-collateralization means that to mint a certain amount of arUSD, collateral of more than the equivalent value of minted arUSD has to be provided. This so-called collateralization ratio differs for each collateral type. The purpose of backing arUSD with more collateral than can be minted is to protect against the volatility of the collateral market price movements.

What are the Advantages of Minting vs. Farming?

Minters will continually earn APR from fees and APR from ACRE rewards, while farmers will always encounter impermanent losses.

To hedge, minters can engage in mirror farming. For example by selling arUSD for USDT (or using separate funds) and stake the USDT at Aave for additional yield.

What is a minter?

A minter provides collateral to the protocol, mints arUSD, and maintains a healthy collateralization ratio (Risk Ratio) between collateral deposited and debt.

What are the benefits of minting?

A minter provides liquidity to the Arable protocol to make synthetic farming and trading possible. By minting arUSD and providing liquidity at a DEX like Pangolin, farmers can swap arUSD for other cryptocurrency synths at Arable and participate in synthetic yield farming.

We expect the farming activities at Arable to be much higher than on native chains because the Arable ecosystem makes it much easier and cheaper for synthetic farmers to swap between synthetic tokens and move funds between farms.

A minter may profit from

- collecting fees from swapping and farming operations
- earning ACRE rewards for minting arUSD
- liquidity mining LP tokens for ACRE rewards
- yield from 'mirror farming' on native chain protocols

Earning from Fees

Minters can earn up to 90% of the fees generated when farmers swap between synths or arUSD <-> synth. The exact percentage of those fees that goes to minters will be determined through governance and is thus subject to change. Minter's earnings are paid out in arUSD.

ACRE Rewards

Just by minting arUSD minters already earn ACRE rewards. 9% of the total inflation is distributed to minters this way. ACRE rewards are generated until the minted arUSD are burned.

Liquidity mining

Minters can also earn further ACRE rewards if they provide arUSD liquidity at a 3rd party DEX like Pangolin. Minters can stake the LP tokens at Arable to generate more ACRE rewards.

Mirror Farming

To take advantage of more yield opportunities, minters may swap arUSD for another cryptocurrency and farm them at a native farm.

What is Debt in the Context of Minting?

When you use the Arable app for minting (M.Factory,) you will be confronted with four terms relating to debt:

- Collateral Value
- Maximum Debt
- Current Debt
- RIsk Ratio

and we will add another one that will help explain how debt is handled by the protocol

- System Debt

Collateral Value

The total value of the collateral deposited by the minter is called ‘Collateral Value’.

Maximum Debt

The maximum amount of arUSD that can be minted based on the Collateral Value is called ‘Maximum Debt’. Maximum Debt is affected by the value of the deposited collateral. If more collateral is posted or it rises in value, the Maximum Debt increases accordingly, and vice versa.

Current Debt

‘Current Debt’ is the amount owed to the protocol by the minter. When the minter mints arUSD, the Current Debt increases. The Current Debt is also affected by the System Debt. More on that below.

Risk Ratio

The ratio between the value of the deposited collateral and the minted arUSD is called the Risk Ratio. The Risk Ratio is expressed as a percentage: (Current Debt / Maximum Debt) * 100

Minters must keep their Risk Ratio at or below 100% or risk getting liquidated.

The Risk Ratio fluctuates when the price of the provided collateral or the Current Debt changes. For example, if a minter deposited WAVAX as collateral and if AVAX goes down in price, the Risk Ratio increases, or when the Current Debt falls, the Risk Ratio decreases. And vice versa.

If the Risk Ratio exceeds the required threshold of 100%, the minter needs to lower their Risk Ratio by either burning arUSD or adding more collateral:

- If the Risk Ratio goes *above* 100%, the minter should burn arUSD or add more collateral
- If the Risk Ratio goes *below* 100%, the minter may mint more arUSD or withdraw some collateral.

If the Risk Ratio goes too high, the minter risks liquidation. See the section on liquidation for more details.

System Debt

The ‘System Debt’ is the combined Current Debt of all minters. As this collective debt pool rises and falls, each minter’s Current Debt changes proportionally to the amount of arUSD they minted. Multiple factors can affect the size of the System Debt and in consequence the Current Debt:

Action	**Debt Movement**
Rewards for synthetic farmers are generated	▲
arUSD is minted	▲
arUSD is burned	▼
Price of the underlying asset of a synth rises	▲
Price of the underlying asset of a synth falls	▼

Example

Minter Mark and Mike each mint 100 arUSD for a total of 200 arUSD, which puts their Current Debt at $100 each. The System Debt (combined Current Debt) is now valued at $200 and as such, each minter carries 50% of the System Debt.

Farmer Freya buys all 200 arUSD and buys arETH at Arable.

The price of ETH goes down by 40%. This causes the System Debt to also decrease by 40%.

What is now the Current Debt of minters Mark and Mike? Since they each minted half of all arUSD available, their individual Current Debt decreases by 40% as well to $60 respectively.

An exercise for the reader:

What happens to each minter’s Current Debt and the System Debt in the above scenario if a 3rd minter ‘Martin’ minted an additional 200 arUSD?

Answer:

System Debt: $320

Current Debt:

- Mark: $80
- Mike: $80
- Martin: $160

Mike and Mark each hold 25% of the System Debt and Martin 50% while Freya still swapped 200 arUSD for ETH, but which in this scenario only accounts for 50% of the total minted arUSD.

What are the accepted collateral assets at the launch of MVP?

Initially, we will support USDT, AVAX, and ACRE. We are planning to support other assets via partnerships in the future.

Liquidation Risk

What is Liquidation?

When you mint arUSD, which is in essence borrowing arUSD against the collateral you posted, the protocol must ensure that you can repay the loan. The collateral must be greater than the amount you owe or the protocol will liquidate your position up to the point that your arUSD position is fully covered by the posted collateral while taking into account the required collateralization ratio of each collateral type. You want to avoid liquidation because the liquidator bot will receive 10% of your remaining position value as a reward for closing/reducing your position.

How do I know if I am at risk of getting liquidated?

To quantify the risk of getting liquidated we use the term Risk Ratio. You can see your current Risk Ratio in the ‘M.Factory’ section of the Arable app. If your Risk Ratio is <= 100%, you are fully collateralized and there is nothing for you to do. If your Risk Ratio goes over 100% you are under-collateralized and the minter's position in arUSD is no longer fully backed by the deposited collateral:

- A minter will be flagged for liquidation if the Risk Ratio exceeds 150%. The position can be liquidated immediately if the Risk Ratio remains above 150% for more than three days.
- The minter faces immediate liquidation if the Risk Ratio exceeds 200%.

Once your Risk Ratio exceeds 100% you need to start taking action. There are two options to restore the Risk Ratio to <= 100% and become fully collateralized:

- add more collateral
- burn previously minted arUSD

What Happens at a Liquidation Event?

When a liquidation happens, the liquidator adds arUSD into the system and burns it. At the same time, the minters' debt is reduced by the same amount. Additionally, 10% of the minters collateral is deducted and credited to the liquidator as a reward. This reward is withdrawn from the minter's collateral in equal amounts across all types of deposited collateral.

Tokenomics

What is Tokenomics?

The study of the economics of crypto tokens or cryptocurrencies is called tokenomics. It fundamentally involves studying the factors that impact the demand and supply of tokens. The factors include quality, distribution, and production of crypto tokens.

What are the Details for Arables Tokenomics?

Arable's native token is called ACRE. The ACRE token is also used as a utility token and a governance token. The maximum supply of ACRE is 1 billion, and the initial supply is 100 million. Every year there will be new ACRE tokens released. The tokens being released will be cut by one-third ⅓ every year. For the first year after the initial supply, there will be a 300 million ACRE supply. There will be a 200 million supply for the second year, and there will be a 133 million supply for the third year. This pattern of supply will continue until depletion.

There is a 25% allocation of the total supply for team members and a 45% allocation to liquidity miners. For stakers and delegated stakers there is a 25% allocation of the total supply, and 5% of the total supply is allocated for community incentives spending. The remaining 25% is reserved for developer vesting.

Arable also has a strategic reserve for OTC deals. The initial supply will be distributed with a strategic reserve of 60 million and 40 million distributed through the airdrop program.

Airdrop

What is an airdrop, and why are they used?

An airdrop is a distribution of a cryptocurrency token or coin, usually for free, to numerous wallet addresses. It usually involves taking a snapshot of the state of a blockchain at a point in time. This snapshot is then used at a later point in time to select the eligible recipients and issue the free tokens. The airdrop issuer will normally have a process for eligible recipients to follow to receive the free airdrop tokens.

A startup normally uses airdrops to reward individuals who could potentially help the startup, as the snapshot of the chosen blockchain may align with the startup's values or partnership strategies.

Who is eligible for the Arable airdrop, and what are the conditions?

Users of the following platforms are eligible for the airdrop of ACRE tokens:

- Lobster DAO NFT holders
- AVAX holders
- SNX holders, and collateral providers
- PNG holders

At present, 10% of the airdrop has already been given to individual wallets. By following the process on the airdrop page of the Arable website, eligible users will have the opportunity to get familiar with the project by using the platform and helping us to have a larger educated user base. While using the platform, the criteria of the airdrop will slowly be met, and the full airdrop amounts will be distributed.

The Airdrop is valid until after six months from the launch, and there's no lock period on airdropped tokens. There are approximately 60K+ members that are eligible for the airdrop, and there are 40 million ACRE tokens allocated for the airdrop.

Where can users get more free tokens, other than the airdrop?

Arable users can participate in upcoming Arable competitions or be active in the community and help grow the community. Arable also has an ongoing bug bounty program for the technically minded Arable users that help identify any bugs in the protocol. The Arable social channels are constantly monitored, and we take note of users that help.

Competitions

What competitions do Arable hold, and what are the rules?

Arable holds a variety of competitions at various times, and each one has its own rules. The rules of any active competition are published on our social channels.

Usually, anyone can participate in our competitions apart from internal team members. Arable competitions can consist of but are not limited to Learn2Earn quizzes, bug bounties, Arable community lead growth challenges, and most profitable farmer challenges. The prizes for any given competition may vary.

Validators

What are validators?

Validators are distributed nodes that run a software program providing various essential services for the Arable protocol. Not all of the following features will be available when the Arable app launches. The protocol will introduce them over time as the protocol develops.

Validators

- ensure the availability and correctness of off-chain data. This data includes pricing data of multichain assets and off-chain yield farms
- provide financial security to the protocol
- distribute rewards to delegators
- verify transactions
- arUSD stability bot
- liquidation bot.

What are the requirements to become a validator?

Validators are expected to:

- Maintain a server that is online 24/7
- Stake a minimum amount of ACRE. Currently, that minimum is 100k
- Pay the required gas fees for any transactions performed on the c-chain by the validator. Once we move to our own chain, these fees are eliminated
- Ensure the security of the server
- Run validator Node.js script(s) and keep it/them updated.

Validators with prior experience on other blockchain protocols are preferred.

How are validators incentivized?

Validators receive ACRE rewards from self-delegation. They also earn a commission from the rewards that delegated stakers receive. Validators can set a commission rate from 0% to 25%.

Are validator nodes required to have a GPU?

GPUs are not required to run a validator node at this time. GPUs may become a requirement when we move to our own chain in the future.

Will the validator script be audited?

Yes, an audit with a 3rd party provider is planned.

How many validators will be permitted?

We are limiting the total number of validator nodes to 20 at launch and will increase the number of available slots to 50 by the time MVP launches.