



Litepaper

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Introduction

What is autoscale?

autoscale is a decentralized yield optimizer developed within the MultiversX ecosystem, enabling users to earn and compound interest on their cryptocurrency holdings. Operating atop the Hatom Protocol, the leading DeFi platform on MultiversX, autoscale focuses on safety and efficiency, delivering some of the highest returns available on stablecoin. By leveraging a suite of investment strategies implemented through secure smart contracts, the platform maximizes user rewards from various liquidity pools and other yield farming opportunities in the DeFi space.

At the core of autoscale's offerings are its vaults, which leverage advanced investment strategies to not only automatically reinvest farmed reward tokens back into the user's original deposited asset but also unlock a wide range of additional yield generating opportunities. Beyond simple compounding, autoscale vaults support diverse strategies, including multi-protocol optimizations and, if necessary, arbitrage on assets like USH. This flexibility allows users to maximize returns in ways that traditional vaults cannot. Unlike conventional vaults, funds deposited within autoscale are not locked.

Since Hatom protocol V2 is now live, autoscale's initial release will center on its lending feature, with additional capabilities rolling out progressively. Our infrastructure is fully integrated with Hatom, fostering a symbiotic relationship that drives mutual success.

DeFi applications stand out for their permissionless and trustless nature, allowing anyone with a compatible wallet to interact with them directly, without relying on intermediaries. With autoscale, users maintain full control over their assets through a self-custodial interface, ensuring their funds remain entirely in their hands.

Vision & Mission

Autoscale is dedicated to revolutionizing the DeFi experience by simplifying access to high yield opportunities and making decentralized finance more intuitive and accessible.

Our mission includes:

- Delivering the best yields across diverse assets by maximizing market returns.
- Making DeFi yields and products accessible and comprehensible for a broader audience.
- Removing complexities that make DeFi intimidating for new users.
- Creating a seamless user experience that rivals traditional investment platforms in ease of use.

Our user-centric approach influences every aspect of our product development, ensuring that our solutions are effective, efficient, and easy to use.



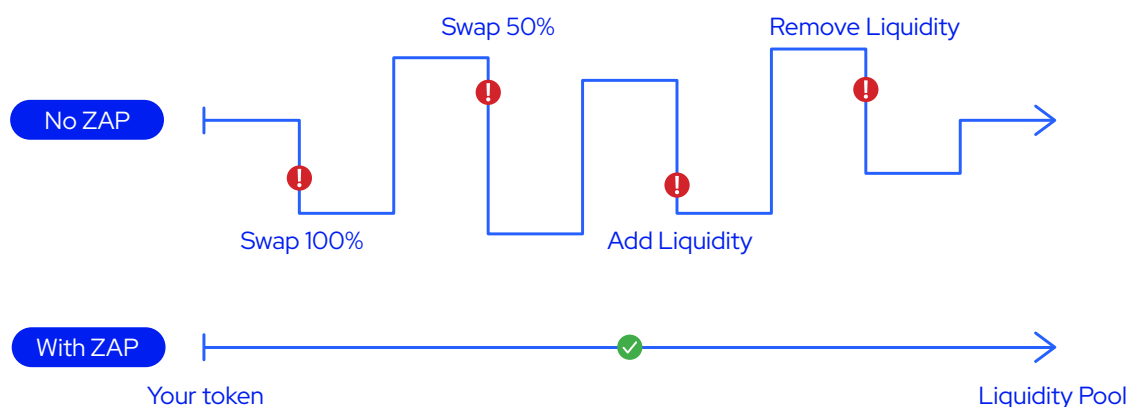
Autoscale products

Autoscale vaults

Autoscale vaults are designed to maximize available market yields through meticulously crafted strategies. Users deposit assets into vaults dedicated to specific tokens, and these vaults employ smart contract driven strategies to optimize and compound returns automatically.

Autoscale zap

The zap streamlines the process of adding liquidity and managing investments across various decentralized exchanges. Without autoscale's zap, the deposit process is both time consuming and effort intensive. Users must first select the autoscale vault they wish to deposit into. Then, they need to locate and navigate the appropriate platform to acquire the specific asset required by that vault. This search can lead them across multiple sites, forcing them to switch between platforms. Once they find the right asset, they must execute a series of transactions: swapping while ensuring precise amounts, adding liquidity while maintaining exact proportions, and more. Even for experienced users, these steps can take up to five minutes just to complete the prerequisites for depositing into autoscale.



To eliminate this friction, we developed the autoscale zap. The zap automates all the preliminary steps, transforming a complex, multi-step process into a seamless and effortless experience.

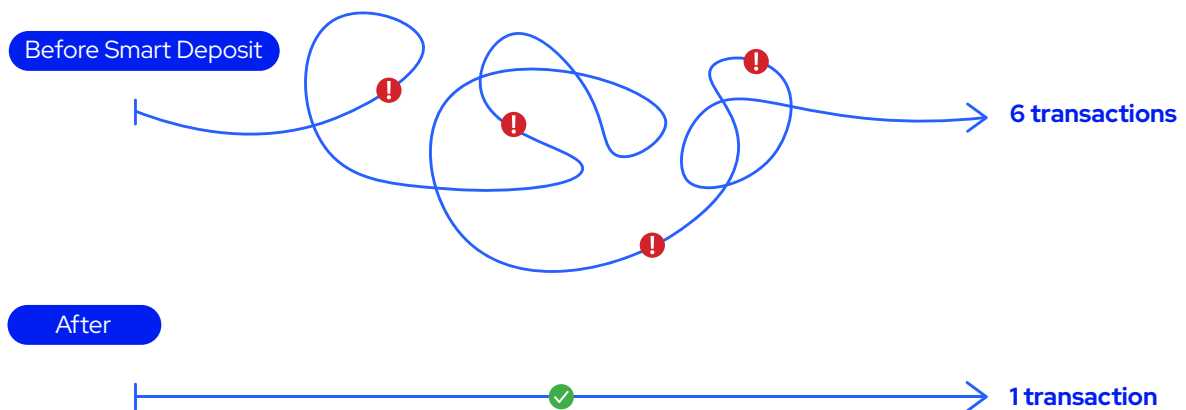
Last but not least, it facilitates liquidity provision across various trading pairs on multiple decentralized exchanges. It is also optimized to identify the most efficient routes for each operation, ensuring users receive the best possible price.

But Zap goes even further. We introduced an innovative feature called "Smart Deposit & Smart Withdraw", which allows users to deposit into any autoscale vault using any token in their wallet. When withdrawing, they can also choose their preferred token, removing the need for multiple transactions that would otherwise be required.



Smart Deposit & Smart Withdraw:

- Users can deposit any token in their wallet into an autoscale vault, and the system automatically converts it to the required asset.
- Upon withdrawal, users can receive their funds in the token of their choice, eliminating unnecessary conversions.



These innovations are a cornerstone for autoscale. They eliminate nearly all the frictions users face with competitors, making it easier and faster than ever to invest and generate returns. Now, with just one step and in just a few seconds users can put their assets to work on autoscale.

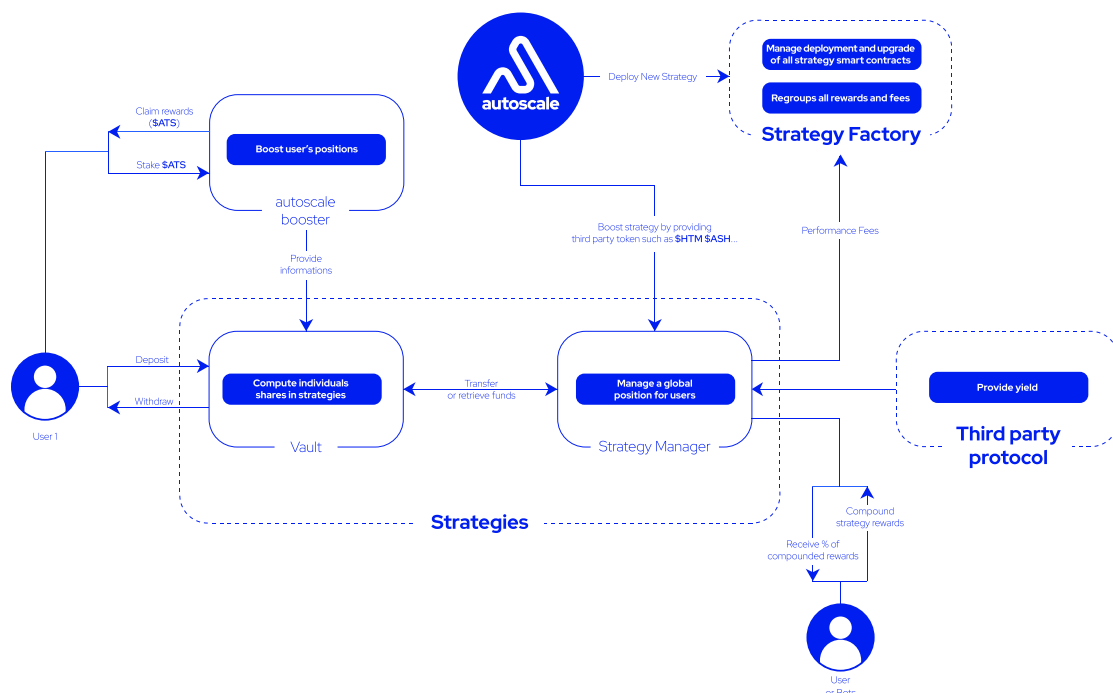
Architecture

As a yield optimizer, autoscale interacts with multiple third-party protocols. To ensure flexibility and maintainability, its architecture has been designed to be as generic as possible, with a strict separation of concerns for functionalities common to all strategies, including:

- Computing users' shares
- Managing fees
- Retrieving APR and APY
- Handling asset deposits and withdrawals

This generic design facilitates seamless frontend and backend development, enhancing user experience (UX) while reducing the risk of bugs.

The architecture is designed to function autonomously, requiring no direct administrative intervention. The compound function can be executed by any user in a single transaction, with necessary swaps performed on decentralized exchanges (DEXs) such as xExchange or AshSwap for instance.



As a result, autoscale operates as an interconnected ecosystem of smart contracts, where the core components include the vault factory, the vault, and dedicated strategy contracts (e.g., Hatom lending, AshSwap farm auto-compound, among others).

Vault

The vault is a generic smart contract through which users interact with the system. Its primary function is to manage autoscale's operational logic, serving as an intermediary between users and the strategy contracts described earlier. Each vault is uniquely associated with a single strategy, necessitating the deployment of one vault per strategy.

Upon user deposit, the vault mints the corresponding share, represented as an ESDT token known as the AV-token (Autoscale Vault token). This non-fungible token, which is freely transferable, encapsulates all the metadata required for users to withdraw their funds from the vault at a later time.

In addition to computing and managing shares, the vault applies fees to both deposits and withdrawals. These fees are deducted as a percentage of the transaction amount. To mitigate yield-gaming, an early exit penalty is also implemented, imposing an additional fee when a user withdraws funds shortly after making a deposit.

A key advantage of the vault lies in its generic architecture. All vaults operate with identical code and provide uniform endpoints, thereby ensuring a clear separation between autoscale's core logic and the strategy specific logic. The vault remains agnostic to the source of yield and the third-party protocols where users' funds are allocated.

This genericity extends benefits to both the backend and frontend development processes, as it allows for the implementation of features in a unified manner across all strategies.

Vault factory

The vault factory is a smart contract that is deployed once and is responsible for deploying and owning all vault and strategy contracts. Its primary function is to provide a unified entry point for autoscale's administration. By incorporating functions that automate contract deployments, it significantly reduces the risk of human error.

As the owner of all vault and strategy contracts, the vault factory receives all fees, which can be subsequently claimed by the autoscale treasury wallet. Additionally, it maintains a record of previous deployments, facilitating backend and frontend operations by enabling the discovery of all deployed autoscale strategies through a single request.



Lending strategy

Autoscale's Hatom lending strategy manages a pooled position on behalf of all vault users. It deposits assets into Hatom's lending contracts and participates in the booster mechanism to maximize returns.

In the Hatom lending strategy users can trigger the compound function, which:

- Claims rewards from lending and booster mechanisms.
- Performs necessary token swaps.
- Reinvests the rewards into the lending contract.
- Send rewards to users calling the endpoint to incentivize them to trigger the compound function and cover the gas fees (auto-compounding is essentially the compound rate determined by the market).

During this process, two types of fees are collected:

- Compound fees: A small percentage of the rewards is allocated to the caller (user) of the compound endpoint. This serves as an incentive to execute the function and cover the associated gas fees.
- Performance fees: A percentage of rewards is allocated to the vault factory, supporting autoscale's revenue model.



Revenue model

At autoscale, we firmly believe in making our platform as accessible and user friendly as possible. That's why we do not charge any deposit fees as it is a core part of our philosophy.

However, to ensure the sustainability of our ecosystem and incentivize long term participation, autoscale applies the following standard fees:

Performance fees

Autoscale applies a 20% commission on all rewards generated by investment strategies. This fee, deducted from earnings only, ensures a sustainable revenue stream for the platform.

Withdrawal fees

Standard withdrawal fee: A 0.1% fee applies when reclaiming the originally deposited token.
Smart withdraw fee: Using the smart withdrawal feature incurs an additional 0.1% fee.

Autoscale zap fees

Whether for adding or withdrawing liquidity, the autoscale zap feature incurs a fixed fee of 0.1% per transaction, contributing to autoscale's long term sustainability. In the case of smart deposits and smart withdrawals, this fee is calculated based on the remaining amount after deducting the vault's respective deposit or withdrawal fee.

Note: To deter malicious activities such as MEV attacks, a 1% fee will be applied to early withdrawals (< 12h). This mechanism is designed to protect the integrity of the platform while ensuring fair rewards distribution.



ATS booster

To further enhance returns, autoscale introduces the ATS booster, a mechanism designed to provide additional rewards in the form of various tokens, such as USDC or project specific tokens. This system incentivizes liquidity inflow and fosters a mutually beneficial ecosystem for autoscale, its users, and partner projects.

How the ATS booster works

To achieve the maximum yield boost, a user must acquire ATS tokens equivalent to 10% of their deposited amount. Additionally, for those seeking further optimization, autoscale offers three lock-in periods that provide extra rewards in exchange for temporarily immobilizing ATS tokens.

The available lock-in periods are:

30 days
90 days
180 days

It is important to note that, despite locking their ATS tokens, users can withdraw their funds at any time. However, if they exit before the lock-in period ends, the protocol applies an early withdrawal fee.

NOTE: The mechanism behind the lock-in period and its associated return will be detailed at a later stage



Boost calculation example

To better illustrate how the boost affects rewards, consider the following scenario: Assume that the full boost corresponds to a 10% increase in ATS rewards, and a X-month lock period provides a 1.5× multiplier. The boosting mechanism operates as follows:

1. User U_1 holds \$1,000,000 in the vaults and has \$50,000 of unlocked ATS in the vaults. Their boost score is calculated as:

$$S_1 = 1,000,000 \cdot \left(\frac{50,000}{100,000} \right) = 500,000$$

2. User U_2 holds \$100,000 in the vaults, with \$1,000 of ATS locked for X months and \$5,000 of unlocked ATS. Their score is:

$$S_2 = 100,000 \cdot \left(\frac{(1,000 \cdot 1,5) + 5,000}{10,000} \right) = 65,000$$

3. User U_3 holds \$500,000 in the vaults and has \$50,000 of ATS locked for X months. Their score is:

$$S_3 = 500,000 \cdot \left(\frac{50,000 \cdot 1,5}{50,000} \right) = 750,000$$

For a given user U_i , their allocated share of the total rewards R_i is determined by:

$$R_i = R \cdot \frac{S_i}{S}$$

where: R_i represents the total rewards available for distribution.

S is the sum of all scores across all users:

$$S = \sum_y S_y$$

This proportional allocation ensures that users who contribute more liquidity and lock their ATS for longer durations receive a higher share of the boosted rewards.

By implementing the ATS Booster, autoscale maximizes capital efficiency, incentivizes long term participation, and rewards users for their commitment, creating a sustainable and growth oriented ecosystem.



ATS token

Usage

The ATS token plays a central role in optimizing yields for autoscale users. Designed as a key incentive mechanism, it allows depositors to enhance their returns through a structured boosting system. To achieve the maximum boost (excluding the lock-in period bonus), a user must hold ATS tokens equivalent to 10% of their deposited amount. For example, if someone deposits \$1,000 in USDC, they will need to acquire \$100 worth of ATS tokens to unlock the highest possible yield boost.

Beyond simple yield enhancements, the ATS token follows a deflationary model, ensuring long term sustainability and value retention. Several mechanisms reinforce this model:

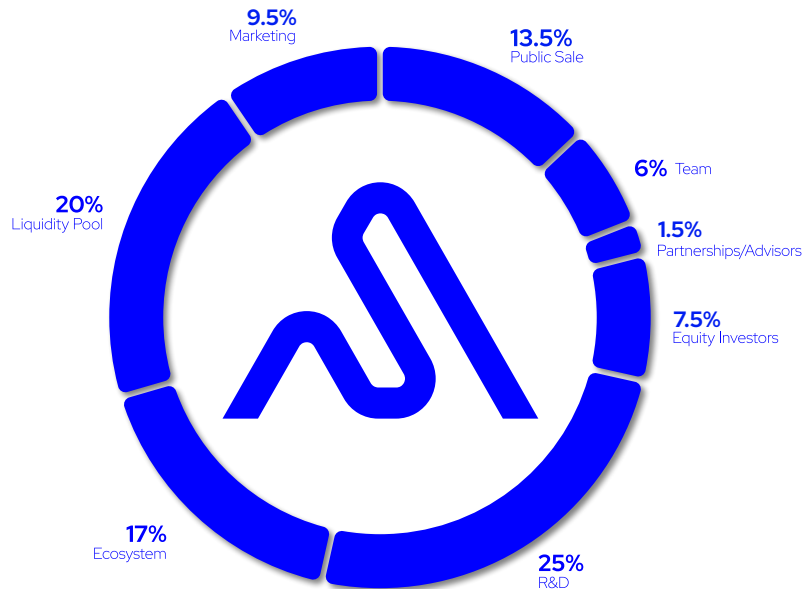
- Lock-in periods with optimized boosters, incentivizing users to hold ATS for extended durations while maximizing their returns (see the section Lock-in periods).
- Additional yield on selected assets, rewarding long term holders who integrate ATS into their portfolio as mentioned previously.
- Buyback and burn strategy, where a portion of the protocol's revenue is used to repurchase ATS tokens from the market and permanently remove them from circulation. This approach helps reduce supply over time, creating upward price pressure and benefiting holders.

Through these mechanisms, the ATS token not only acts as a yield amplifier but also fosters a sustainable economic model that aligns incentives for long term growth.



Distribution

The total supply of ATS tokens is strategically allocated to ensure liquidity, incentivization, and ecosystem growth. Below is the detailed token distribution model:



25% Research & Development: Dedicated to technological advancements, including oracle integrations, AI driven tools, and ongoing feature development.

20% Liquidity pool: Ensuring deep liquidity for ATS trading pairs such as ATS/USDC and ATS/EGLD, stabilizing the token's price and facilitating smooth transactions.

17% Ecosystem: Used for rewards, grants, hackathons, bug bounties, and MultiversX integrations to drive innovation and adoption.

13.5% Public sale: Designed to promote broad community participation and decentralized ownership.

9.5% Marketing & Communication: Supporting digital campaigns, influencer collaborations, and educational content to grow autoscale's reach.

7.5% Equity investors: Attracting experienced investors to provide strategic guidance and ensure sustainable expansion.

6% Team: Rewarding contributors and attracting top talent, with a vesting schedule ensuring long term alignment with the project's success.

1.5% Partnerships & Advisors: Compensating strategic advisors and partners to strengthen autoscale's ecosystem.

The ATS tokenomics are built to create a robust and self-sustaining economy, ensuring that long term holders and active users benefit from its strategic design.



Roadmap

Paving the way for scalable and seamless decentralized finance

As we progress toward our vision, our roadmap is structured into three strategic phases, each designed to enhance user experience, optimize return generation, and expand our ecosystem.



Phase 1 (Q1 2025): Laying the foundation

We are currently in the first phase, where we have successfully launched our devnet and are actively collecting user feedback to refine our platform. Our focus is on ensuring security and robustness through an additional audit before the mainnet deployment of the Hatom booster V2 contract next month. Alongside this, we are intensifying our communication strategy, fostering industry partnerships, and engaging with our community to build a solid foundation for adoption.



Phase 2 (Q2 2025): Expanding capabilities

With the V2 launch, we will introduce advanced investment and savings strategies such as liquidity pools innovations, and automated compounding. This phase also marks the deployment of the ATS Booster, featuring native token integration and a bug bounty program to further strengthen security. Enhancing the user experience remains a priority, with intelligent dashboards, AI-powered insights, and DeFAI, a natural language interface simplifying DeFi interactions. Our presence within the industry will also grow through conferences and strategic events.



Phase 3 (Late 2025–2026): Scaling and innovating

In the final phase, we will implement a cross-chain expansion strategy to maximize accessibility. Autonomous agent development will optimize yield on stablecoins with minimal fees, while our innovation lab will support cutting edge research by onboarding PhD candidates through grants. Finally, our focus on accessibility will be reinforced through an advanced user interface and API development, ensuring harmonious interaction for Web2 users and offering premium access features.

Our roadmap represents a commitment to continuous innovation, security, and user-centric development. By eliminating friction and simplifying access to DeFi, we are building a future where decentralized finance is as intuitive and efficient as it is powerful.





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