## What is staking as a service? {#what-is-staking-as-a-service}

Staking as a service ("SaaS") represents a category of staking services where you deposit your own 32 ETH for a validator, but delegate node operations to a third-party operator. This process usually involves being guided through the initial setup, including key generation and deposit, then uploading your signing keys to the operator. This allows the service to operate your validator on your behalf, usually for a monthly fee.

## Why stake with a service? {#why-stake-with-a-service}

The Ethereum protocol does not natively support delegation of stake, so these services have been built out to fill this demand. If you have 32 ETH to stake, but don't feel comfortable dealing with hardware, SaaS services allow you to delegate the hard part while you earn native block rewards.

## What to consider {#what-to-consider}

There are a growing number of SaaS providers to help you stake your ETH, but they all have their own benefits and risks. All SaaS options require additional trust assumptions compared to home-staking. Saas options may have additional code wrapping the Ethereum clients that is not open or auditable. SaaS also has a detrimental effect on network decentralization. Depending on the setup, you may not control your validator - the operator could act dishonestly using your ETH.

Attribute indicators are used below to signal notable strengths or weaknesses a listed SaaS provider may have. Use this section as a reference for how we define these attributes while you're choosing a service to help with your staking journey.

## Explore staking service providers {#saas-providers}

Below are some available SaaS provider. Use the above indicators to help guide you through these services

### SaaS providers

Please note the importance of supporting client diversity as it improves the security of the network, and limits your risk. Services that have evidence of limiting majority client use are indicated with *"execution client diversity"* and *"consensus client diversity."*

### Key Generators

Have a suggestion for a staking-as-a-service provider we missed? Check out our product listing policy to see if it would be a good fit, and to submit it for review.

## Frequently asked questions {#faq}

Arrangements will differ from provider-to-provider, but commonly you will be guided through setting up any signing keys you need (one per 32 ETH), and uploading these to your provider to allow them to validate on your behalf. The signing keys alone do not give any ability to withdraw, transfer, or spend your funds. However, they do provide the ability to cast votes towards consensus, which if not done properly can result in offline penalties or slashing.

Yes. Each account is comprised of both BLS *signing* keys, and BLS *withdrawal* keys. In order for a validator to attest to the

state of the chain, participate in sync committees and propose blocks, the signing keys must be readily accessible by a validator client. These must be connected to the internet in some form, and are thus inherently considered to be "hot" keys. This is a requirement for your validator to be able to attest, and thus the keys used to transfer or withdraw funds are separated for security reasons.

The BLS withdrawal keys are used to sign a one-time message that declares which execution layer account staking rewards and exited funds should go to. Once this message is broadcast, the *BLS withdrawal* keys are no longer needed. Instead, control over withdrawn funds is permanently delegated to the address you provided. This allows you to set a withdrawal address secured via your own cold storage, minimizing risk to your validator funds, even if someone else controls your validator signing keys.

Updating withdrawal credentials is a required step to enable withdrawals*. This process involves generating the withdrawal keys using your mnemonic seed phrase.

**Make certain you back this seed phrase up safely or you will be unable to generate your withdraw keys when the time comes.**

*Stakers who provided a withdrawal address with initial deposit do not need to set this. Check with your SaaS provider for support regarding how to prepare your validator.

Staking withdrawals were implemented in the Shanghai/Capella upgrade in April 2023. Stakers need to provide a withdrawal address (if not provided on initial deposit), and reward payments will begin being distributed automatically on a periodic basis every few days.

Validators can also fully exit as a validator, which will unlock their remaining ETH balance for withdrawal. Accounts that have provided an execution withdrawal address and completed the exiting process will receive their entire balance to the withdrawal address provided during the next validator sweep.

More on staking withdrawals

By using an SaaS provider, you are entrusting the operation of your node to someone else. This comes with the risk of poor node performance, which is not in your control. In the event your validator is slashed, your validator balance will be penalized and forcibly removed from the validator pool.

Upon completion of the slashing/exiting process, these funds will be transferred to the withdrawal address assigned to the validator. This requires providing a withdrawal address to enable. This may have been provided on initial deposit. If not, the validator withdrawal keys will need to be used to sign a message declaring a withdrawal address. If no withdrawal address has been provided, funds will remain locked until provided.

Contact individual SaaS provider for more details on any guarantees or insurance options, and for instructions on how to provide a withdrawal address. If you'd prefer to be in full control of your validator setup, learn more about how to solo stake your ETH.

# Further reading {#further-reading}

- The Ethereum Staking Directory - *Eridian and Spacesider*
- Evaluating Staking Services - *Jim McDonald 2020*