



Validating made
light and simple

The future client
experience

Kaushal (@liftlines)
Ecosystem Development, Nimbus



Nimbus: Ethereum network participation for everyone

An easy, efficient, and high performing ethereum client



The Status Network

—



Nimbus



Codex



status



Waku



Vac

The future ethereum client
experience must be informed by
its current and future users.





Current Users

Individual /
Solo Stakers

Professional
Node Operators



Professional Node Operators





Professional Node Operators

Professional Node Operators
expectations are changing.

Nimbus team had the
opportunity to interact directly
with over 12 Node operators
running operations from
different countries.



Professional Node Operators

Professional Node Operators expectations are changing.

Nimbus team had the opportunity to interact directly with over 12 Node operators running operations from different countries.

- I. Each node operator ran between 2500-7000 validators
- II. Operate from specific countries/regions
- III. Offer staking-as-a-service to individual customers
- IV. Servicing the need for operating infrastructure at scale as part of liquid staking operations
- V. Increasingly looking to service the staking needs of institutions operating in their jurisdictions



Professional
Node Operators

—

Node Operators optimise for reliability and scale.

Key measures
of success

—

- I. Uptime (redundancy)
- II. Reward performance
- III. Operating efficiency



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Evaluate clients based
on

–

- I. Stability
- II. Reward performance
- III. Fit with their current setup
- IV. Release communication and rhythm
- V. Client team communications/responsiveness
- VI. Testing rigour and variety

Desired client evolution?



Desired client evolution?

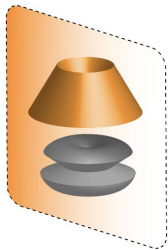
Greater flexibility,
proven interoperability.





Professional Node Operators

Nimbus is unbundling the client for 'Node Operators' to enable greater flexibility and fit with their current operations.



Integrated Beacon Node
and Validator Client

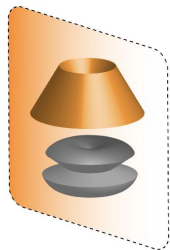
AVAILABLE





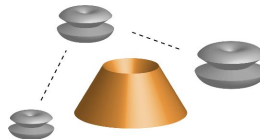
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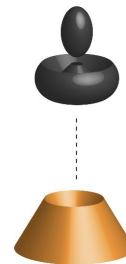
Integrated Beacon Node
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AVAILABLE



Run the Nimbus Beacon
Node with other Validator
Clients (LH, VOUCH)

AVAILABLE



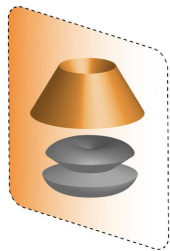
Nimbus Beacon Node
with Web3signer /
Remote Signer

AVAILABLE



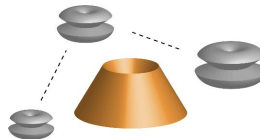
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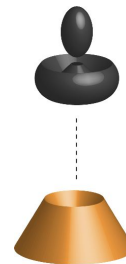
Integrated Beacon Node
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AVAILABLE



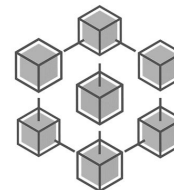
Run the Nimbus Beacon
Node with other Validator
Clients (LH, VOUCH)

AVAILABLE



Nimbus Beacon Node
with Web3signer /
Remote Signer

AVAILABLE



Nimbus validator client
with other Beacon Node
implementations

AVAILABLE (BETA)



Professional
Node Operators

An advanced Validator Client that also improves redundancy

Introducing features that
enable Node operators to
protect against malicious
internal actors or
infrastructure failures.





Professional
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An advanced Validator Client that also improves redundancy

Introducing features that
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—



- I. Features inspired by the secret shared validators research
- II. Address non-trivial risks for operators who run large number of validators
 - A. Rogue employees
 - B. Malicious infrastructure providers
 - C. Infrastructure failures



Professional
Node Operators

An advanced Validator Client that also improves redundancy

A key-splitting scheme for the validator signing keys, where each individual server stores only a portion of the validator key.

- I. Splitting the sysadmin staff in sub-teams, so that a sub-team has access to only a portion of every key.
- II. Distributing portions of keys in several different infrastructure providers.





Professional
Node Operators

An advanced Validator Client that also improves redundancy

A key-splitting scheme for the validator signing keys, where each individual server stores only a portion of the validator key.

Challenge:

This requires the necessary organization changes introducing tighter server access controls and administration sub-teams.

Possible solution:

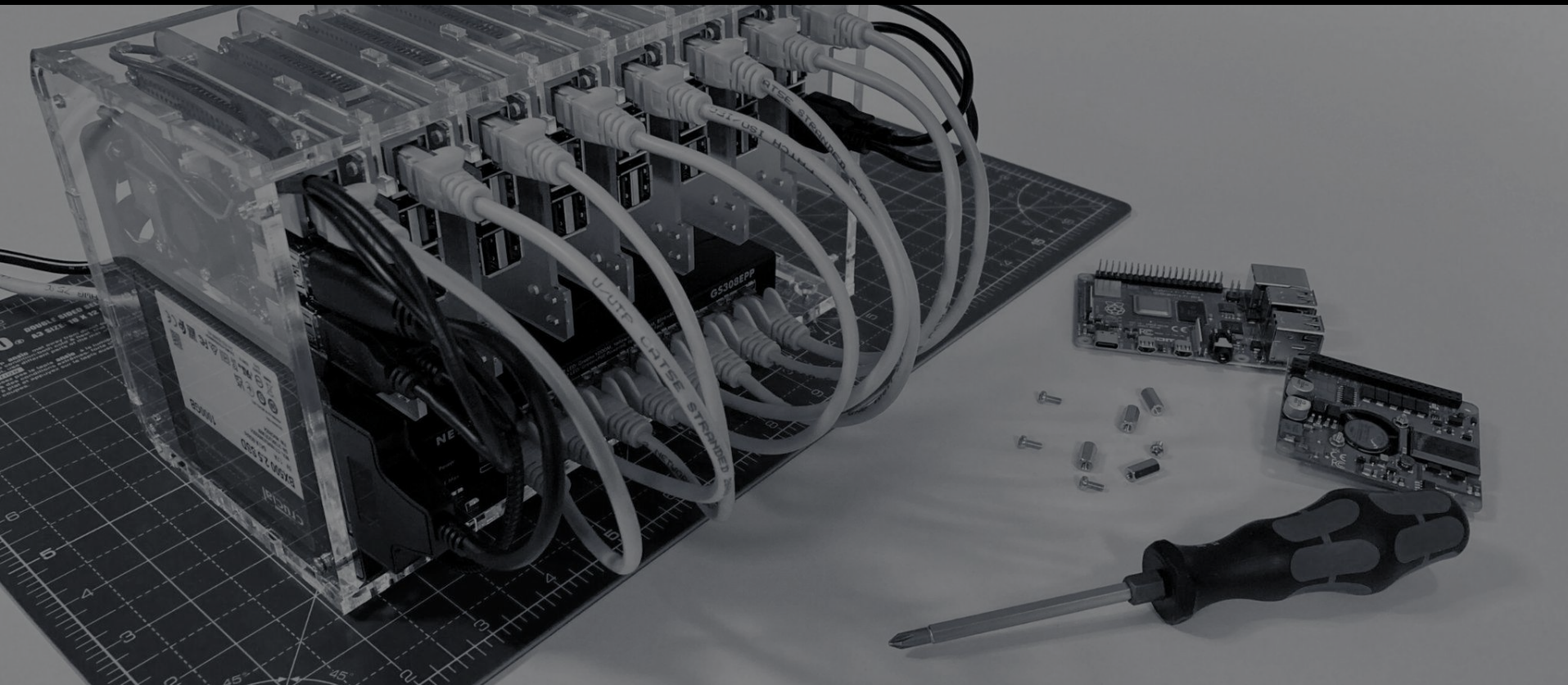
A new kind of remote keystore where each item is sent for signing to multiple web3signer instances.

Extending to profit maximization with multiple beacon nodes





Individuals





Individuals

High potential, but held back

Recent research by Hester Bruikman and Aqeel Mohammad from Status, indicates that there is high degree of interest in 'independently' participating in the network but held back by perceived limited options, high skills barrier and information spread.



Individuals

High potential, but held back

Recent research by Hester Bruikman and Aqeel Mohammad from Status, indicates that there is high degree of interest in 'independently' participating in the network but held back by perceived limited options, high skills barrier and information spread.

- I. Is there a non-CLI option please?
- II. Don't have 16 or 32 Eth, so how could I participate independently?
- III. Information is scattered across forums, Discord servers and client documentation

Let's acknowledge the current efforts to address these challenges.





Nimbus is contributing to this effort.



1

Nimbus + Status

Abstracting complexity away and providing choice - key to future participation

We believe the future client experience for Individuals must lower the technical skills barrier so that more individuals can participate in the network.

Abstracting complexity away with a visual interface (no CLI 🤖) could bring new participants to the network.

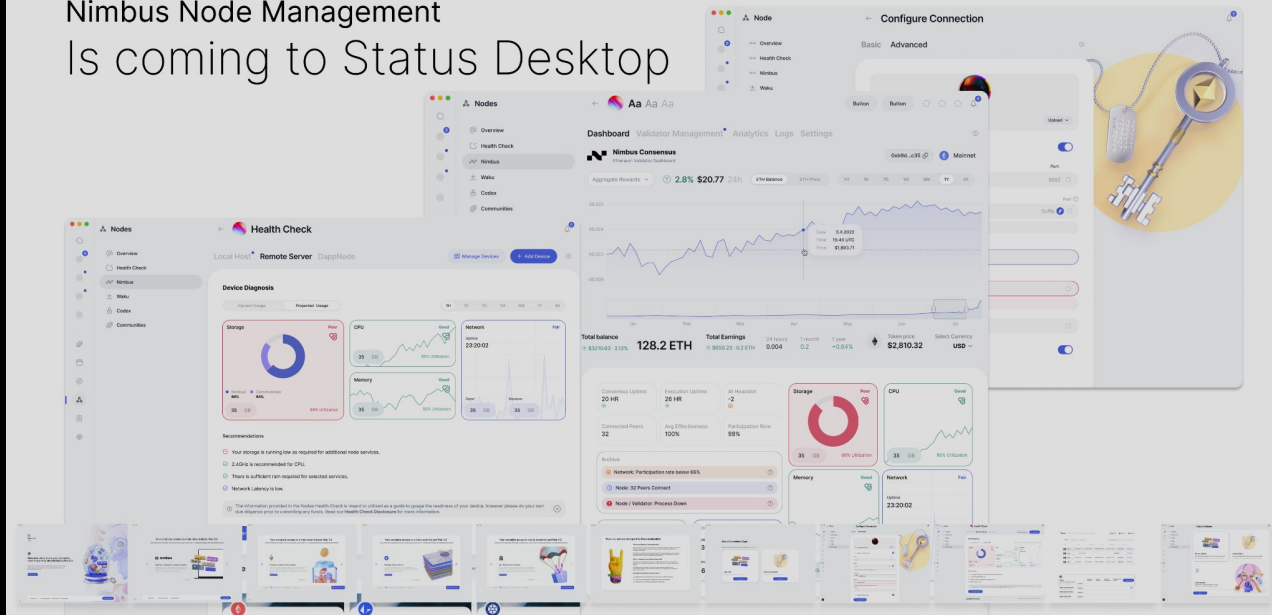


A simple, integrated staking experience being built by the Status team.



Nimbus Node Management Is coming to Status Desktop

*Status Nodes is in early development and the product experience may differ in actual product.





2

Execution +
Consensus

—

A simpler and seamless setup experience for execution + consensus client

The complexity of running a node has increased relatively as one needs to ensure all components of the node are working well in tandem!

Execution Client + Beacon Node + Validator Client + MEV (optional)



2

Execution +
Consensus

—

A simpler and seamless setup experience for execution + consensus client

In the spirit of abstracting complexity away from individual users, Nimbus is working on an Execution client which will be easy to use with the Nimbus Consensus client (also usable independently).



Nimbus Execution Client + Consensus Client

Seamless setup and management



3

Light Web3 Proxy

—

ethOS + Nimbus
working on a native
and embedded proof
of concept

—

Participate in other ways

Ethereum JSON-RPC proxy that uses the beacon chain light client sync protocol to verify the data supplied by any Ethereum node in order to deliver a new type of ultra light Ethereum client.





3

Light Web3 Proxy

ethOS + Nimbus
working on a native
and embedded proof
of concept



Participate in other ways

Ethereum JSON-RPC proxy that uses the beacon chain light client sync protocol to verify the data supplied by any Ethereum node in order to deliver a new type of ultra light Ethereum client.

- I. Set up a light web3 proxy on your phone
- II. Point your wallet to the proxy which gets the state root from the LC network
- III. Proxy can now request balance and 'proof' from any provider/untrusted node
- IV. Proxy checks proof against state root and verifies the balance.
- V. Allows one to trust data from any untrusted source, as proxy performs verification on the fly

Want to learn more about the Light
Web Proxy?



📍 Talk 2 – Cold Forest, Floor 3
👤 414

Light Clients After the Merge

Talk Intermediate

LAYER 1 PROTOCOL

🕒 Day 4 – Fri, Oct 14 13:30 - 13:55 25 Mins

Speakers



Etan Kissling



In conclusion, the future client experience will be different for individuals and node-operators.

Focus on simplicity + flexibility.



Thank you!

Kaushal

Ecosystem Development for Nimbus,
Waku and Status Network



@liftlines

