

# Summary

There is currently a (lengthy) [discussion](#) taking place (which I started) on ethresear.ch about the centralisation and reliance on third-party cloud services that current (execution and consensus) bootnodes exhibit. To avoid repeating the whole discussion thread and feedback, I recommend everyone to quickly read through the ethresear.ch thread.

This post is intended to draw attention to the ongoing discussion and to engage Lido Node Operators (NOs) in a possible solution of providing community-based execution and consensus bootnodes in addition to client team bootnodes. The preferred solution is to distribute as many bare metal bootnodes as possible across different jurisdictions.

## Overview Execution Clients

### Go-Ethereum

- Mainnet bootnodes: [go-ethereum/bootnodes.go](https://go-ethereum.org/en/bootnodes/).
- 4 bootnodes running on AWS (2 out 4) and Hetzner (2 out 4).
- In this commit [params: remove EF azure bootnodes \(#26828\)](#) the 4 Azure bootnodes got removed.

### Nethermind

- Mainnet bootnodes: [nethermind/foundation.json](https://nethermind.io/en/bootnodes.json).
- 34 bootnodes running. 4 of the 32 bootnodes are the Geth bootnodes running on AWS (2 out 4) and Hetzner (2 out 4).
- For the remaining 28 bootnodes, I still couldn't find the hosting locations. However, they use the same bootnodes as in the original Parity client: [trinity/constants.py](https://github.com/paritytech/parity-ethereum/blob/master/parity/genesis.py). Nonetheless, all without information on where hosted.
- In this commit [Remove deprecated EF bootnodes \(#5408\)](#) the 4 Azure bootnodes got removed.

### Erigon

- Mainnet bootnodes: [erigon/bootnodes.go](https://erigon.tech/en/bootnodes.go).
- The 4 Geth bootnodes running on AWS (2 out 4) and Hetzner (2 out 4).
- In this commit [params: remove EF azure bootnodes \(#7061\)](#) the 4 Azure bootnodes got removed.

### Besu

- Mainnet bootnodes: [besu/mainnet.json](https://besu.hyperledger.org/en/mainnet.json).
- 14 Bootnodes running. 4 of the 10 bootnodes are the Geth bootnodes running on AWS (2 out 4) and Hetzner (2 out 4). Additionally, 5 legacy Geth and 1 C++ bootnodes are listed. Nonetheless, all without information on where hosted.
- In this commit [Remove deprecated EF bootnodes \(#5194\)](#) the 4 Azure bootnodes got removed.

## Overview Consensus Clients

### Lighthouse

- Mainnet bootnodes: [lighthouse/boot\\_enr.yaml](https://lighthouse.bloxroute.com/boot_enr.yaml).
- 13 bootnodes running. The 2 Lighthouse (Sigma Prime) bootnodes are currently hosted on Linode in Australia (information via [this comment](#)). Additionally, 4 EF, 2 Teku, 3 Prysm and 2 Nimbus bootnodes are listed. Nonetheless, all without information on where hosted.

### Lodestar

- Mainnet bootnodes: [lodestar/mainnet.ts](https://lodestar.io/mainnet.ts).
- 13 bootnodes running. The 2 Lighthouse (Sigma Prime) bootnodes are currently hosted on Linode in Australia (information via [this comment](#)). Additionally, 4 EF, 2 Teku, 3 Prysm and 2 Nimbus bootnodes are listed. Nonetheless, all without information on where hosted.

### Nimbus

- Mainnet bootnodes (pulled via submodule): [eth2-networks/bootstrap\\_nodes.txt](#).
- 13 bootnodes running. The 2 Lighthouse (Sigma Prime) bootnodes are currently hosted on Linode in Australia (information via [this comment](#)). Additionally, 4 EF, 2 Teku, 3 Prysm and 2 Nimbus bootnodes are listed. Nonetheless, all without information on where hosted.

## **Prysm**

- Mainnet bootnodes: [prysm/mainnet\\_config.go](#).
- 13 bootnodes running. The 2 Lighthouse (Sigma Prime) bootnodes are currently hosted on Linode in Australia (information via [this comment](#)). Additionally, 4 EF, 2 Teku, 3 Prysm and 2 Nimbus bootnodes are listed. Nonetheless, all without information on where hosted.

## **Teku**

- Mainnet bootnodes: [teku/Eth2NetworkConfiguration.java](#).
- 13 bootnodes running. The 2 Lighthouse (Sigma Prime) bootnodes are currently hosted on Linode in Australia (information via [this comment](#)). Additionally, 4 EF, 2 Teku, 3 Prysm and 2 Nimbus bootnodes are listed. Nonetheless, all without information on where hosted.

## **Discussion**

I would like to see Lido NOs providing community-based execution and consensus bootnodes in addition to client team bootnodes. The underlying reason is that IMHO it's important to have globally numerous distributed bootnodes available to preserve the censorship-resistance core value and resilience of Ethereum as a whole.

The exact governance process around the “vetting” of such community-based bootnodes is yet to be defined. Please share your thoughts and possible solution approaches to how Lido NOs can become part of this undertaking.