



Haym @SalomonCrypto

Nov 6 • 26 tweets • [SalomonCrypto/status/1589302062201700352](https://twitter.com/SalomonCrypto/status/1589302062201700352)

(1/25) [@Ethereum](#) Roadmap: Middleware

Think back to 2015, does the Ethereum we have today look like what you were imagining back then?

Now think forward to 2030, or even 2122. What will that version of the World Computer look like?

Are you ready for the Middleware Gold Rush?



(2/25) [@ethereum](#) is the World Computer, a single, globally shared computing platform that exists in the space between a network of 1,000s of computers (nodes).

The nodes provide the hardware, the EVM provides the virtual computer and the blockchain records Ethereum's history.

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(1/21) [@ethereum](#): The Big Picture

From 1492 to 2022, the context, technology and vision of the World Computer. The complete, top-to-bottom case for [\\$ETH](#).

An (unprecedented) mega-thread.



3:00 PM · Sep 3, 2022 

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(3/25) [@ethereum](#) is still very much in development, both at the computer science level and in our understanding of what Ethereum is even.

Imagine entering Disney Land in 1955 vs today. Our conception of what a theme park is has radically changed.



(4/25) Let's say (in 2022) I told you we were going to Disneyland for a week long getaway, but somehow tricked you into going to the 1955 version of the park.

The moment the nostalgia wore off, you'd be unimpressed; that's just the nature of 70 years of technology and building.

(5/25) When you look at PoW [@ethereum](#), I want you to think "1955 Disneyland."

When you look at (today's) post-Merge PoS [@ethereum](#), I want you to think "1970s Disneyland." Much more impressive: we've got Tomorrowland and a much more groovy crowd!

(6/25) We can't see the future; it's impossible to stand in today's theme park and know what's coming.

But [@ethereum](#) is different.

The future of Disneyland exists inside the head of like 8 executives and a cartoon mouse.

The future of Ethereum is on YouTube.

(7/25) I (literally) could go on for DAYS on the [@ethereum](#) roadmap, so let's focus on one concept: validators.

Everything you need to know is in the thread below, but we'll keep it simple; a validator stakes 32 \$ETH in order to participate in the network.

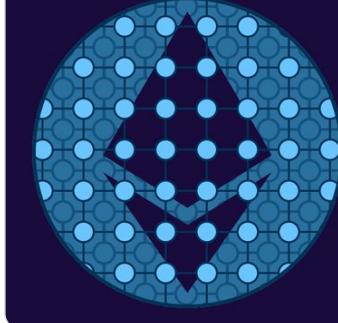
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(1/29) [@ethereum](#) Fundamentals: Proof of Stake

We are post-Merge; Ethereum is now secured by validators, 32 \$ETH at a time. At first glance, PoS is simple, but under the hood things get complicated.

The ultimate guide to the consensus mechanism at the core of the World Computer.

Ethereum Consensus



**Proof
of
Stake**



10:07 PM · Oct 10, 2022 

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(8/25) Today, "participating in the network" consists of

- updating the EVM (once every 12 seconds)
- attesting (once every 6.4 minutes)
- proposing (very rarely, ~.5 times per month)
- sync committee (even rarer, maybe once a year)

(9/25) Back to our analogy, we are in 1970s Disneyland. If you were to compare it to both versions, you'd notice that 1970s looks A LOT more like 1955 than 2022 Disneyland.

And that's the case with today's validators. We basically think of them as the 2.0 version of \$ETH miners.

(10/25) But just like the 1970s seem quaint and simple to us in 2022, the idea that [@ethereum](#) validators are the energy-efficient version of miners will seem... nostalgic.

Ready to see the future? First we need to learn about some of the more exciting Ethereum projects.

(11/25) First: [@eigenlayer](#)

When participating in [@ethereum](#), a validator puts 32 \$ETH at stake. If a validator does something malicious, the network can confiscate that stake. Thus, a centralized actor (validator) replaces a trust assumption with crypto-economic security.

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(1/24) Are you liking my [@ethereum](#) roadmap posts? Do you want to further into the future, beyond the roadmap?

Bitcoin was our 0 to 1 for trustless applications.
Ethereum for trustless computing.

And soon, [@eigenlayer](#) will extend \$ETH to provide generic, extendable trust.

EigenLayer Restaking



1) Users become node operators as usual, by locking ETH

2) Node operators can opt-in to providing services via EigenLayer

3) Node operators choose the services they provide
Oracles
Data Availability Layers
Sidechains, Rollups

4) Node operators earn rewards for providing these services. Bad behavior is punished by slashing the node operators staked ETH (using the delegated withdrawal functionality)

5:26 AM · Sep 20, 2022 

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(12/25) Today, in order to reproduce this effect (replace trust with crypto-economic guarantee), each service must spin out its own PoS network - e.g. [@chainlink](#) and \$LINK.

For one oracle? Not a problem. But what about hundreds of services which require a centralized actor?

(13/25) [@eigenlayer](#) allows a validator to place their \$32 ETH under additional slashing conditions in exchange for providing a service.

The future: validators opt-in to providing limitless services and \$ETH becomes the only asset used to secure trustlessness;

(14/25) Second: Distributed Validator Technology (DVT)

A validator is made up of two pieces of software, an execution client (think [@go_ethereum](#)) and a consensus client (think [@prylabs](#)). To run a validator, you need both running on the same computer.



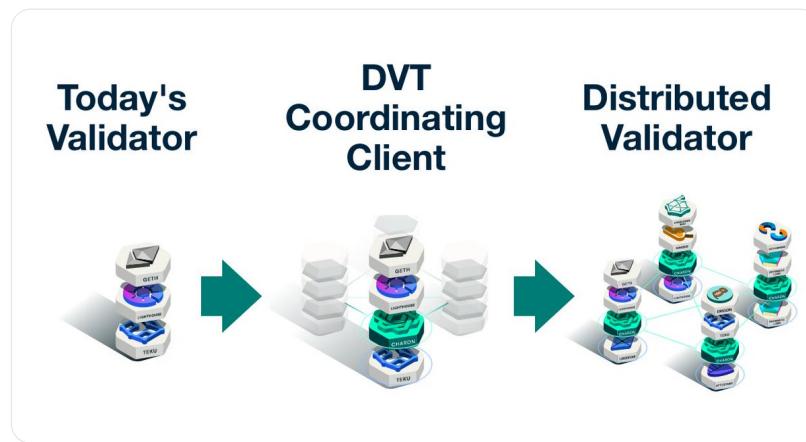
What is
DVT?

 Obol

What is DVT and How Does It Improve Staking on Ethereum?
If you haven't yet heard, Distributed Validator Technology, or DVT, is the next big thing on The Merge section of the Ethereum roadmap.
<https://blog.obol.tech/what-is-dvt-and-how-does-it-improve-staking-on-ethereum/>

(15/25) (Thank you [@ObolNetwork](#) for the article and graphics)

DVT allows us to distribute the different software components across multiple computers. You can run [@Teku_ConsenSys](#) at your house, I'll run [@ethnimbus](#) at mine and TOGETHER we'll be a single validator.



(16/25) This has HUGE implications. For starters, validators can become much more resilient by incorporating backups into a DVT node.

DVT also improves decentralization. 32 \$ETH is a large amount of capital; DVT allows multiple parties to trustlessly split the entrance cost.

(17/25) Seeing the future yet? Hold on, before we pull everything together, let's introduce one more development: Staking-as-a-Service (hilariously called SaaS).

If you are familiar with [@Rocket_Pool](#), you get the idea. Users bring \$ETH, operator stakes on their behalf.

(18/25) But we can take this concept further; in fact, [@stakewise.io](#) already is.

Imagine a marketplace where every shop is a different \$ETH staker. Maybe stalls 20-70 are OFAC complaint, stalls 70-90 are MEV maxis and stalls 90+ are private.



<https://www.youtube.com/embed/aUjigh8tJ68>

(19/25) Any entity can permissionlessly deploy a [@stakewise.io](#) vault, and any user can deposit their \$ETH with any (public) vault.

Different operators can offer different services, configurations and other customizations, while users can pick the vault that works best for them.

(20/25) And now, dear reader, it's time to peer in to the future. A future where the [@ethereum](#) validator is a powerful platform that can be used to transform ANY centralized action into a decentralized service, secured by ultra sound \$ETH.

(21/25) Scroll back to tweet 8 for the current responsibilities of a validator.

Other than maintaining the current state of the EVM, a validator is basically a once-every-6-min-job.

Any (decent) modern computer will have WAY more resources than it takes to do that.

(22/25) Tomorrow's [@ethereum](#) will unlock all that computing power and reshape the World Computer.

DVT will further increase the available resources by allowing a validator to grow beyond a single computer. Validators will be arbitrarily large and complex.

(23/25) [@eigenlayer](#) will allow these validators, single computers or distributed clusters, to unlock these resources for use in products and services you cant even dream of yet (beginning with oracles, rollups and data-availability layers).

All secured by/accruing value to \$ETH.

(24/25) And everyone, from [@Tetranode](#) to [@greg16676935420](#) to grandma and even to you dear reader, will be able to participate in this future.

Just by scanning through some vault descriptions on a SaaS marketplace.

(25/25) So, dear reader, get excited. We are watching the culmination of thousands of years of technological advancement and millions of years of human coordination.

Get excited and get ready, for the Middleware Gold Rush imminent.



<https://www.youtube.com/embed/K2ExicgCZLk>

More of a long-form reader? Try this:



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The Middleware Gold Rush

The Middleware Gold Rush | Haym
(1/25) @Ethereum Roadmap: Middleware Think back to 2015, does the Ethereum we have today look like what you were imagining back then? Now think forward to 2030, or even 2122. What will that version...
<https://typefully.com/SalomonCrypto/bDyH44z>

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