



Haym @SalomonCrypto

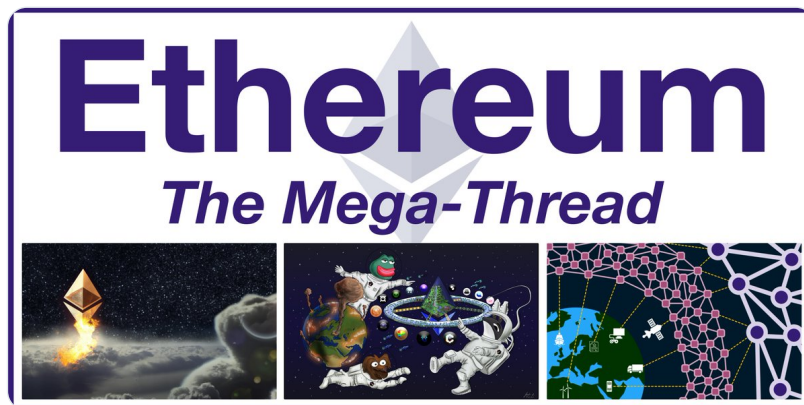
Nov 15 · 26 tweets · [SalomonCrypto/status/1592309373732151296](#)

(1/25) [@ethereum](#): The Complete Story

What is Ethereum and why is it important? How does it work today and what's on the roadmap?

In the Ethereum endgame, why is \$ETH so valuable?

A comprehensive mega-thread on the inevitability of Ethereum.



(2/25) [@ethereum](#) is a distributed computing platform. A network of 1,000s of computers (nodes) coordinating using Proof of Stake (PoS) to keep the Ethereum Virtual Machine (EVM) in sync.

The EVM is the shared computing platform, the blockchain its history and \$ETH its lifeblood.

**Haym**
@SalomonCrypto · [Follow](#)



(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

 [Read the full conversation on Twitter](#)

 993  Reply  Copy link

[Read 47 replies](#)

(3/25) Each node runs a local copy of the [@ethereum](#) Virtual Machine (EVM), a Turing-complete environment that computes the state of the World Computer

Although each node's copy is independent, every EVM is sync; the state of any local copy IS the state of the globally shared EVM

**Haym**
@SalomonCrypto · [Follow](#)



(1/23) [@ethereum](#) Virtual Machine (EVM)

Ethereum is the World Computer, the future's internet-native global settlement layer. The EVM is the core of Ethereum; it provides the world in which settlement and decentralized computation happens.

Read on to learn about core [\\$ETH](#) tech!



4:33 AM · Sep 27, 2022 

 [Read the full conversation on Twitter](#)

 382  Reply  Copy link

[Read 22 replies](#)

(4/25) The process which keeps all of these EVMs in sync is called Proof of Stake (PoS).

Tl;dr a node operator can escrow (stake) 32 \$ETH to become a validator, with the right to operate and secure [@ethereum](#) and to earn \$ETH. Malicious behavior is punished with "slashing."



(5/25) Slashing is the process of 1) confiscating some/all of a validator's staked \$ETH and 2) ejecting them from the validator set.

This is the economic incentive that secures [@ethereum](#); we don't have to trust operators because the costs of cheating are higher than the rewards.

(6/25) [@ethereum](#) deploys \$ETH to replace a trust assumption (users need to trust operators) with an economic assumption (users know that node operators want to be profitable).

This is the magic of cryptocurrency: we have a solution for untrusted coordination.

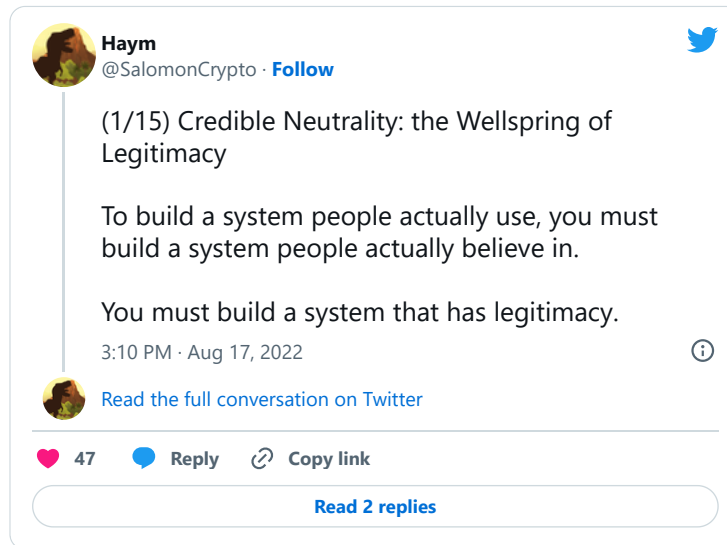
Trustless trust.

(7/25) [@ethereum](#) gives us an option that isn't controlled by a single entity, that can't exclude or prejudice any party on earth.

Politics, revenge, back-room deals will always matter... but on the World Computer they will NEVER result in censorship, exclusion, or confiscation.

(8/25) Trustless trust is predicated on a decentralized [@ethereum](#). The more nodes that are controlled by a single entity, the easier it becomes to attack the network.

Trustless trust comes from credible neutrality. Credible neutrality comes from decentralization.



(9/25) The [@ethereum](#) we have today is still young and evolving. To be frank, it is not yet ready to assume the mantle of global settlement platform or any of the other prominent roles it will inevitably hold.

It is still too slow, too expensive and too hard to access.

(10/25) At the end of the day, real computers need to be running the software that makes [@ethereum](#) possible.

The performance of the World Computer is limited by the minimum requirements we place on the individual nodes.


Better node hardware = better Ethereum performance.


(11/25) But we have an issue. Better node hardware is more expensive and harder to get. Increasing a node's min reqs may increase the speed at which [@ethereum](#) can process transactions... at the cost of decentralization.

Are performance and decentralization opposing forces?

(12/25) Because here's the thing... today we have decent decentralization and terrible speeds and our minimum specifications are already very high.

Increasing node requirements will cost MUCH more decentralization than it will gain in performance.

**Haym**
@SalomonCrypto · [Follow](#)




(1/16) [@ethereum](#) Basics: Nodes

At the end of the day, Ethereum is running atop IRL computers, each running the software that powers the World Computer. But what actually is a node? How does it relate to the different parts of Ethereum? How do all the pieces communicate?

(Post-Merge) Ethereum Nodes


An Ethereum node is a real computer running software. Agents in the Ethereum network are called validators. One node can support many validators




Node (Hardware) → Node (Software) → Validators




A node is made up of two pieces of software (clients) that communicate directly via a JSON-RPC interface and externally via their own P2P interfaces.

Consensus Client
Beacon chain
Beacon state
Execution chain
Operational mempool
P2P Interface

**Execution Client**
Ethereum Virtual Machine
Execution state
Transaction mempool
P2P Interface

2:30 AM · Nov 8, 2022

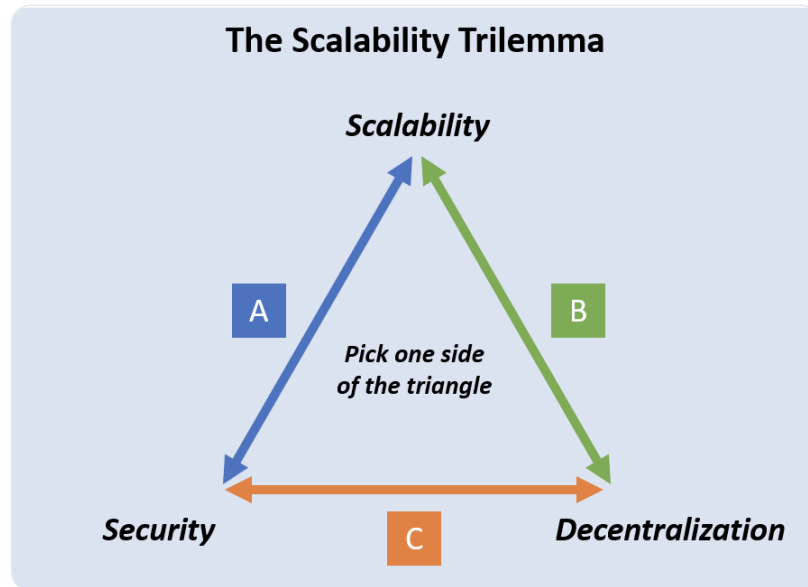
 [Read the full conversation on Twitter](#)

 363  Reply  Copy link

[Read 11 replies](#)

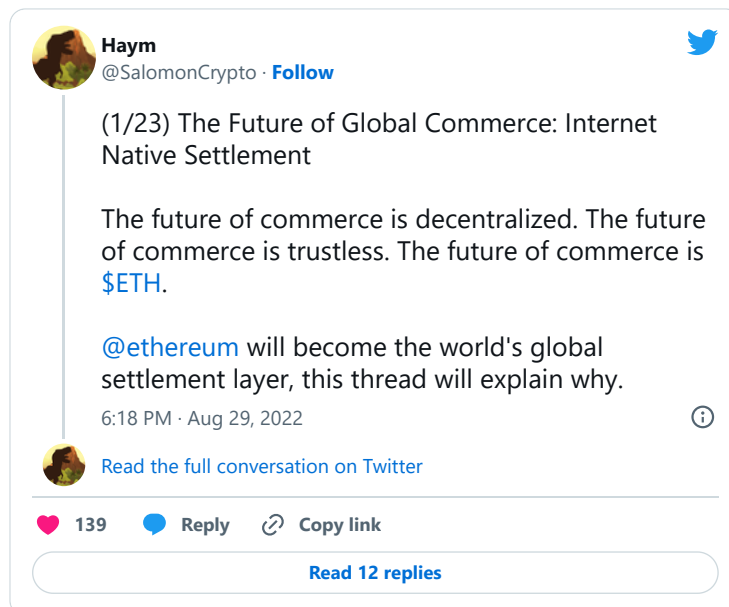
(13/25) We articulate this dynamic with the blockchain Scalability Trilemma. Put simply, pick (at most) two: scalability, decentralization and security.

The trilemma only makes sense if you think of [@ethereum](#) as a typical computer, with a CPU and memory and the like.



(14/25) But [@ethereum](#) is very specifically not typical computer... it is THE World Computer.

We don't need to think "how many transactions can Ethereum process." We need to think "how many transaction can Ethereum settle."



(15/25) This is the idea behind [@ethereum](#) transaction scaling. Move execution off-chain while retaining settlement on-chain.

Rollups will offer a spectrum of centralization/trust assumptions and performance trade-offs, but all will post a record back to Ethereum.

**Haym**
@SalomonCrypto · [Follow](#)



(1/23) [@ethereum](#) Roadmap: Scaling Execution

[\\$ETH](#) is inevitable; I am more confident today than I have ever been. But let's face facts: Ethereum is SLOW and EXPENSIVE. How will the World Computer scale?

Your guide to Rollups, Danksharding, PBS and more!



The diagram is titled "Ethereum Transaction Scaling". It is split into two panels. The left panel shows a central Ethereum logo surrounded by a circular arrangement of blue squares, with a red dashed line and a red triangle pointing towards it. The right panel shows a sequence of blue squares connected by arrows, with a purple line graph and a yellow square at the end, and a "TIME" label with an arrow pointing right.

2:11 AM · Nov 13, 2022 

 [Read the full conversation on Twitter](#)

 572  Reply  Copy link

[Read 20 replies](#)

(16/25) Each rollup is an independent blockchain that posts a (compressed) copy of every txn it processes back to [@ethereum](#).

As rollups improve execution, they will need to post an increasing amount txn records. Danksharding will VASTLY increase capacity for these records.

**Haym**
@SalomonCrypto · [Follow](#)



(1/30) [@ethereum](#) Roadmap: Danksharding

From A to KZG, a comprehensive guide to the post-Merge roadmap of the World Computer:

- Proto-Danksharding (EIP-4844)
- Proposer-Builder Separation (PBS)
- Danksharding

A megathread deep-dive on decentralized scalability.



1:20 AM · Oct 27, 2022

[Read the full conversation on Twitter](#)

 489  Reply  Copy link

[Read 18 replies](#)

(17/25) The rollup-centric roadmap provides an answer for the execution side of the equation, but it does not address the decentralization.

We need a different set of upgrades improve network decentralization.

(18/25) Currently, there are 2 ways to access [@ethereum](#): operate your own node or use a Node-as-a-Service provider (like [@AlchemyPlatform](#), [@infura_io](#)).

The former is a big (but totally doable!) ask; the later is a great service, but is actively working against decentralization.

Haym
@SalomonCrypto · Follow

(1/28) [@Ethereum](#) Basics: Accessing the World Computer

In order to access Ethereum, you need a node. But running a node is a big deal, it requires serious hardware, bandwidth and active maintenance.

Today we have centralized solutions, but the future of Ethereum is trustless.

12:21 AM · Nov 9, 2022

[Read the full conversation on Twitter](#)

295 Reply Copy link

[Read 14 replies](#)

(19/25) Today, you pass a message through centralized service who interacts with [@ethereum](#) on your behalf.

Tomorrow's solution: light clients. Light clients are pieces of software that can directly, trustlessly access Ethereum without running a full Ethereum node.

(20/25) Before we can support light clients, we first need to upgrade [@ethereum](#) to be stateless.

Stateless is a nuanced topic worth reading more about, but the idea can be summarized as "using cryptography to trustlessly access the EVM without having to store it locally."

**Haym**
@SalomonCrypto · [Follow](#)



(1/24) The Road to a Scalable, Stateless [@ethereum](#)

The World Computer is booting up. As it gets more use we are all watching the data required to manage its internal state inflate to unsustainable levels.

But Ethereum is not yet complete; let's talk about what's coming.

4:38 AM · Nov 5, 2022 

 [Read the full conversation on Twitter](#)

 200  Reply  Copy link

[Read 27 replies](#)

(21/25) But statelessness is not enough to support light clients - the EVM is not the only component of the World Computer. Light clients also need trustless access to consensus (PoS), the mempool, etc.

And so light clients will turn to the Portal Network for this critical data.



Haym

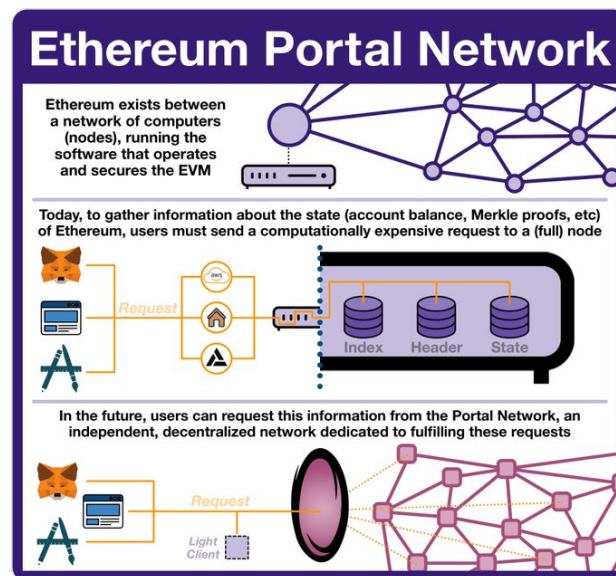
@SalomonCrypto · [Follow](#)



(1/24) @ethereum Light Clients and the Portal Network

In order for Ethereum to achieve its potential as the World Computer, it needs to support decentralized, trustless access. Today, that is just not possible... but the path is clear.

We are going to need the Portal Network.



1:06 AM · Nov 10, 2022



[Read the full conversation on Twitter](#)



175



Reply



Copy link

[Read 5 replies](#)

(22/25) Yes, there is (a lot) of work to do before we are ready for light clients, but once we are there we've reached the [@ethereum](#) endgame.

An endgame that is so much more ambitious and all consuming than the Ethereum we have today.



(23/25) The thread above will bring you to this conclusion, but let's skip to the punchline:

In the [@ethereum](#) endgame, \$ETH is the global currency of trustless trust.

Using \$ETH, any activity, interaction, data point that requires trust can be transformed into a trustless fact.

(24/25) ~500k years ago a few apes climbed down out of the trees and humanity was born.

Everything we have achieved thus far has been a result of collaboration... but collaboration in an environment of concentration, compulsory "trust" in leadership and centralization.



(25/25) In the 21st century, centralization is critically and completely failing us. [@SBF_FTX](#) just proved it, once again.

\$ETH is how we can coordinate without centralization.

The internet of things, a globalizing economy, a post nation-state world...

Ethereum is inevitable.

More of a long-form reader? Try this:

**Haym**
@SalomonCrypto





Ethereum Mega-Thread

Ethereum Mega-Thread | Haym
(1/25) @ethereum: The Complete Story What is Ethereum and why is it important? How does it work today and what's on the roadmap? In the Ethereum endgame, why is \$ETH so valuable? A comprehensive m...
<https://typefully.com/SalomonCrypto/3ycShyo>

Like what you read? Help me spread the word by retweeting the thread (linked below).

Follow me for more explainers and as much alpha as I can possibly serve.

**Haym**
@SalomonCrypto · [Follow](#)




(1/25) @ethereum: The Complete Story

What is Ethereum and why is it important? How does it work today and what's on the roadmap?


In the Ethereum endgame, why is \$ETH so valuable?




A comprehensive mega-thread on the inevitability of Ethereum.



The graphic features the word 'Ethereum' in large purple letters, with 'The Mega-Thread' in smaller purple letters below it. Underneath the text are three small images: a glowing Ethereum diamond on a dark surface, a cartoonish character in a space suit holding a globe, and a network diagram with nodes and connections.

12:11 AM · Nov 15, 2022

 [Read the full conversation on Twitter](#)

 510  Reply  Copy link

[Read 19 replies](#)

...