

> eth++

the next chapter will
be geo-decentralized

[a manifesto // phil@flashbots.net]
v/1.0

... in this talk

1. how does eth die?
2. what is the formula to save it?
3. what are the design requirements of eth3?
4. what are the technologies available?
5. what can I do?
6. what are you/phil/flashbots/etc doing?
 - a. *[and where do TEEs come in?]*

D MEV Relayers and their cooperative status

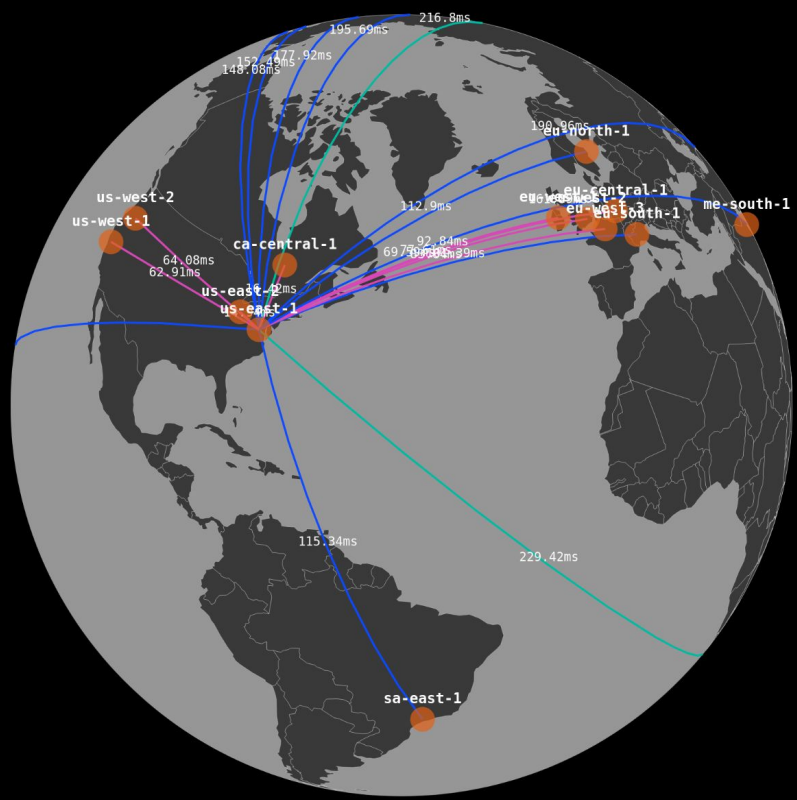
MEV Relayer	OFAC Cooperation?
Aestus	
Agnostic Gnosis	
Blocknative ³⁵	x
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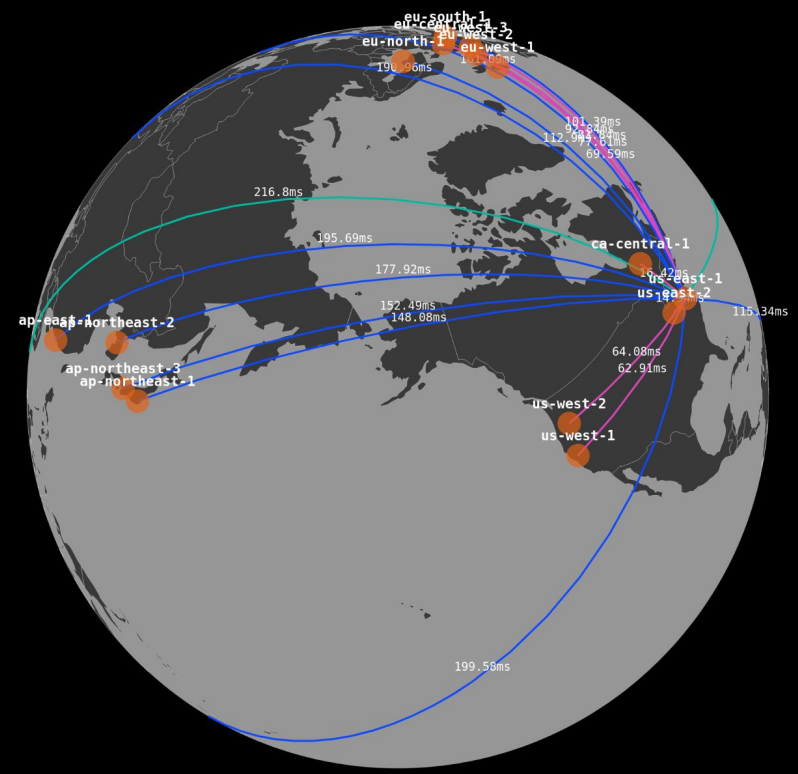
This table presents whether or not top MEV relayers are cooperative to sanctions. We identified 4 relayers that have announced their abstention from engaging with Tornado Cash. Sources: [Blocknative](#), [BloXroute – Regulated](#), [Eden](#)

Regulating Decentralized Systems:
Evidence from Sanctions on
Tornado Cash

AWS data center latencies



AWS data center latencies



#1 **much of world's power is already centralized**
military, economic, geopolitical, social, etc

#2 **centralization begets centralization**
economies of scale, winner-takes-all, 0-sum-games

WE MUST STOP YOLOING PROTOCOL PROPOSALS

WE MUST TREAT DISTRIBUTION OF POWER GLOBALLY AS
A FIRST-CLASS GOAL IN ETH3

THIS IS MORE IMPORTANT THAN PERFORMANCE

, ... OTHERWISE

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What can i do?

let the infinite garden of eth3 bloom



... announcing 🚀 eth3 🚀, the phil way



pillars of 🚀 eth3 🚀 but plz share urs



1. Permissionless
2. Distributed
3. Geo-economically decentralized
4. Neutral-builder efficient

(imo) 🚀 eth3 🚀 must be permissionless

Any economic actor to express their value into a block,
at any point in the block construction process. "The MEV
must flow."

(imo) 🚀 eth3 🚀 must be distributed

The block production must be distributed across many pieces of logical technical infrastructure. "Everything everywhere all at once."

(imo) 🚀 eth3 🚀 must have geo-economic decentralization

The protocol must support the economic properties of a global market, with colocation yielding minimal additional profit. "We traveled the world and the seven seas."

This is the most important property for long-term network robustness, censorship resistance, and more.

(imo) 🚀 eth3 🚀 must have geo-economic decentralization

specifics matter

Decentralized crypto needs you: to be a geographical decentralization maxi

Research article writings



phil mate

2 ✎ Mar 2023

Decentralized crypto needs you: to be a geographical decentralization maxi

In this post, we take a look at trends in MEV that we believe have the opportunity to centralize and weaken the core mission and value proposition of cryptocurrency. We argue that the most important only exit from a future where power dynamics in cryptocurrency become centralized and predatory is through **geographic decentralization**. We then explore the relationship between geographic decentralization and **privacy**, which in our opinion will be a dominant economic phenomenon in the next decade of MEV evolution.

We call on the community of decentralization advocates and developers to help us achieve a future where the beating, global, permissionless heart of cryptocurrency is protected.



Decentralized crypto needs you: to be a geographical decentralization maxi

[Why Geographic Decentralization?](#)

[What is Geographic Decentralization?](#)

[Threats to Decentralization](#)

[Is doing nothing enough?](#)

[Optimizing for Centralization](#)

[Decentralization Utopia; WHY?](#)

[A Call to L1 Developers and Designers](#)

[Wat do?](#)

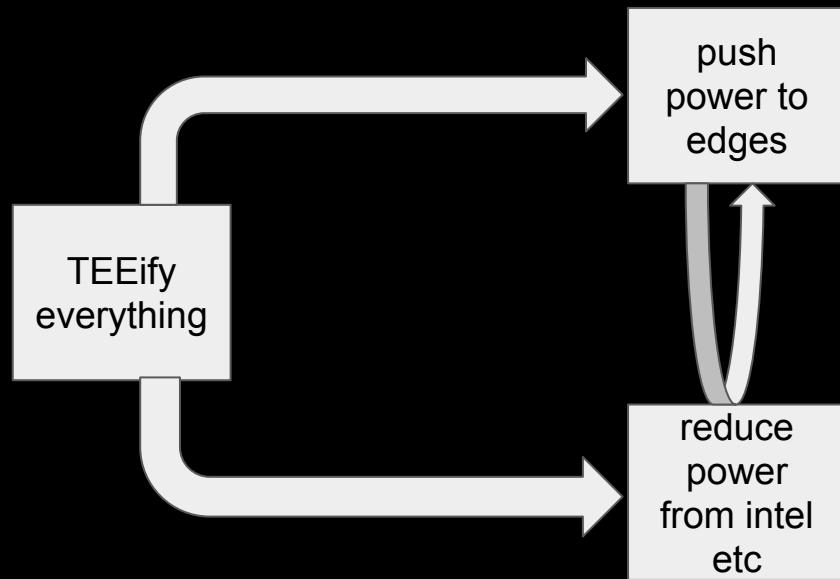
[⚡ Jump to end](#)

(imo) 🚀 eth3 🚀 must have geo-economic decentralization

specifics matter

Definition 1: Let P be some rational player in our game. Let x be the profit they will make from running the protocol, with some latency distribution to all other players. Let x' be the profit they would make from running the protocol if they have ϵ (minimum) latency to other players. Your protocol supports geographic decentralization if x and x' are maximally similar (their percent difference is low).

eth3 - a buidler's roadmap



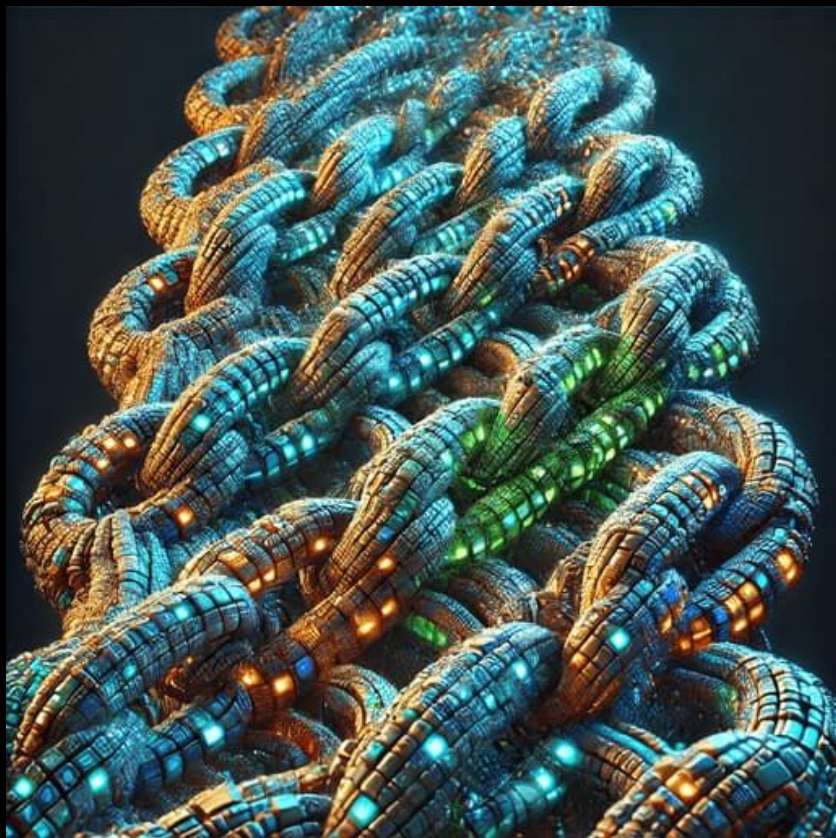
and my "censorship resistance" / robustness / fairness

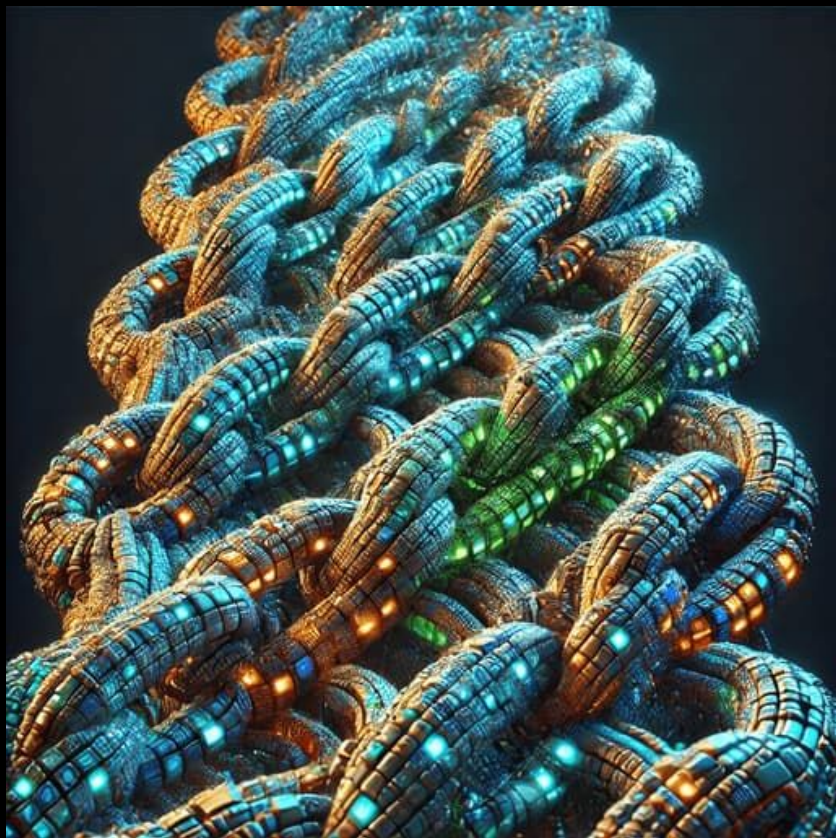
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Select all Binance Smart Chain validators.



VERIFY

and my "censorship resistance" / robustness / fairness

*we cannot tech tree our way out of
political problems*

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*... but we are technologists, our job
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... actual robustness / **decentralization**

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PUSH THIS TO THE EDGES

reject the endgame (imo!)

What do we get after all of this is done? We get a chain where block *production* is still centralized, but block *validation* is trustless and highly decentralized, and specialized anti-censorship magic prevents the block producers from censoring. It's somewhat aesthetically ugly, but it does provide the basic guarantees that we are looking for: even if every single one of the primary stakers (the block producers) is intent on attacking or censoring, the worst that they could do is all go offline entirely, at which point the chain stops accepting transactions until the community pools their resources and sets up *one* primary-staker node that is honest.



detour — a deeper dive into CR



@phildaian

$\lim(\Delta \rightarrow 0) \text{ CR} == \text{fairness}$

... few ...

1:50 PM · Oct 14, 2024 · **976** Views

how to weigh vs. eg global fairness?????????

and my “censorship resistance” / robustness / fairness

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UX fentanyl and decentralization



napkin research and decentralization



napkin research and UX fentanyl and decentralization



the exit must be globally distributed power

the alternative is \$0 eth

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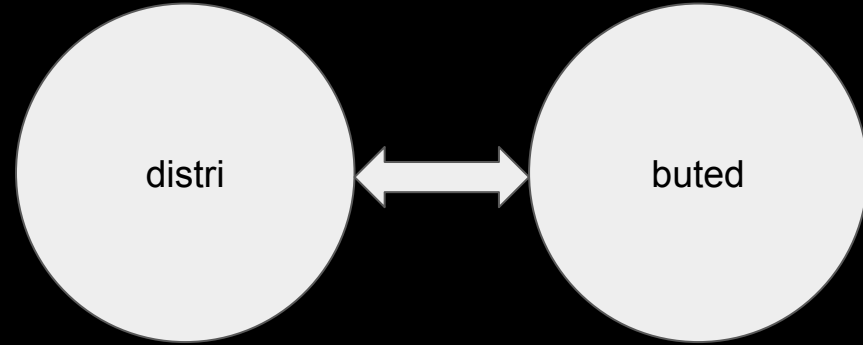
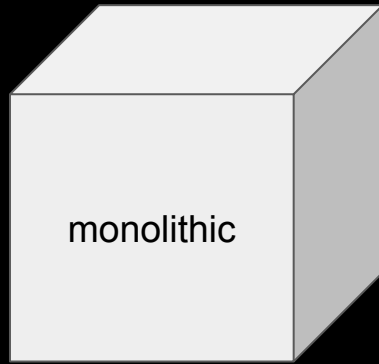
the alternative is \$0 eth

let's move beyond the napkin

the exit must be globally distributed power
 here are the tools

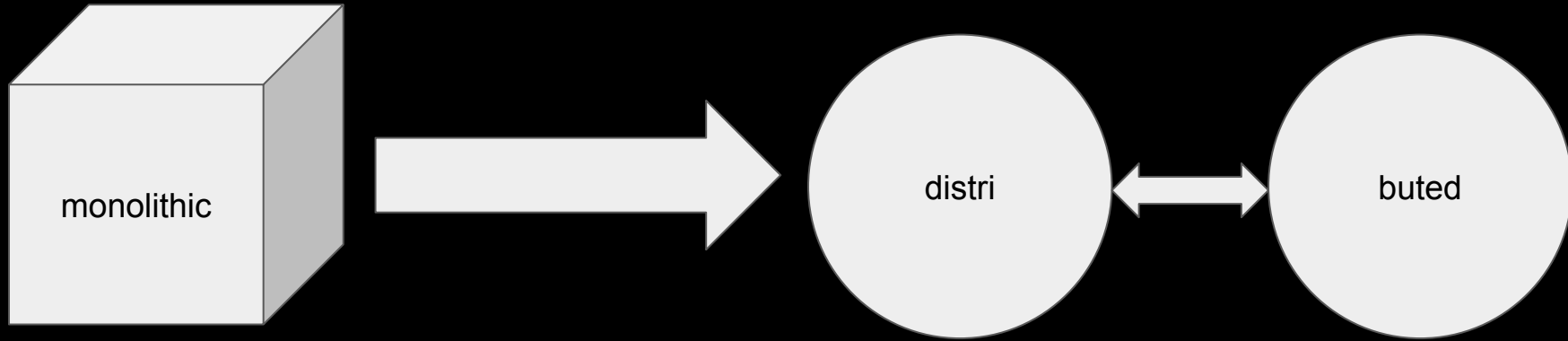
	CENTRALIZED	COMMITTEE	TEE	ECONOMIC	MPC	FHE
<i>who breaks</i>	central actor	subset	Intel + ?	hedge funds	depends	depends
<i>incentive not to break</i>	reputation	future profits	Intel's reputation + ?	financial (can be limited in black swans)	cryptographic? [At least for some breaks?]	cryptographic? [At least for some breaks?]
<i>rent privileges</i>	central actor	subset	depends	depends	depends	hardware manufacturers?
<i>geographical decent</i>	low	low (incentive to colocate)	high	depends	low (bandwidth)	high (bandwidth/CPU tradeoff)
<i>purity</i>	0	very low	low	medium-low	higher?	??

why tees first?



theoretical maximal performance
security guarantees can be iterated
(in this context)

Build it! (s/o TEE community tools!)



The recipe to build it for your dapp:
build demand, distribute infra to
demand, scale network

... and flashbots?



