Veratix (TL;DR Version)

James Tippett

October 10, 2024

Abstract

A fast, hybrid blockchain that takes a fresh approach to solving the blockchain trilemma.

1 Backstory

Veratix began life at Stable, a stablecoin-only payments platform developed in 2022-23. Finding incumbent blockchains not ideal for the purpose of fast, everyday payment tasks, we pivoted to writing our own, which we call Veratix.

This is the condensed version of our whitepaper. Find the full version here.

2 Propositions

Here are our claims, which we will defend and explain:

1. Blockchains have failed to catch on as a popular, general-use payment technology.
2. Traditional blockchains have key drawbacks that prevent them from solving (1).
3. A new approach is needed to solve (2).
4. We respectfully submit this project as a solution to (3).

3 Problems

Below follows a list of drawbacks of traditional blockchains, in the context of everyday payments, that together add up to the general deficiency as introduced in Proposition 2:

3.1 Speed

Almost all payments need to be finalized very quickly. Whether it's tapping to pay for your coffee or clicking through a website, both users and sellers expect to know the transaction's success or failure within a very short time frame. For example, traditional credit card providers typically have a maximum allowable time of 500 milliseconds for transaction finalization.

While some traditional blockchains, like Avalanche, offer relatively fast transaction times, they are still too slow for many real-time payment scenarios.

3.2 Predictability

Traditional blockchains are unpredictable in terms of:

- Cost of transaction
- Amount charged/received (native-token transactions)
- Completion time
- Stability of history (splits/soft forks)

While some of these issues can be mitigated, the solutions usually involve centralized systems, which undermines the fundamental purpose of using blockchain technology.

3.3 Flexibility

Traditional blockchains have no concept of user or owner of an account, making it impossible to delegate or set different rules based on context. Sending any amount requires the same security access as sending all, akin to needing to visit your bank's safety deposit box to buy a cup of coffee.

Additionally, the requirement that any request or transaction must complete within a single block rules out many common payment workflows, such as 2FA requests or additional signatures from co-workers.

3.4 Conclusion

Together, these drawbacks hinder the adoption of current blockchains as a payment option.

4 Our Solution

4.1 The Rethink

Many projects have tried to solve these problems over the years. We decided to take a new approach.

Solving this problem required years of original research, mathematical theorems, and rigorous, peer-reviewed study. But in the end, the solution was deceptively simple.

4.2 Turns Out You Can Just Do This

Why do we need consensus? Why is decentralization important?

Decentralization ensures that no single party has control, thereby preventing censorship, political manipulation, and internal subversion by malicious actors.

However, traditional blockchains integrate this consensus process into every single block, requiring continuous re-authorization, re-voting, and the co-ordination of thousands of nodes. This is hugely inefficient and leads to the performance issues we are trying to solve.

What if we separate the decentralized control from the main transaction path? We don't need or want that many validators. We don't want anonymous validators at all. What if we hold elections for validators, out of the hot path, in advance, through a decentralized process? Then we can allow the main transaction path to operate at full speed, free from the inefficiencies of the constant re-authorization.

Can we put all of that in the DAO?

4.3 Yes, You Can Just Put That in the DAO

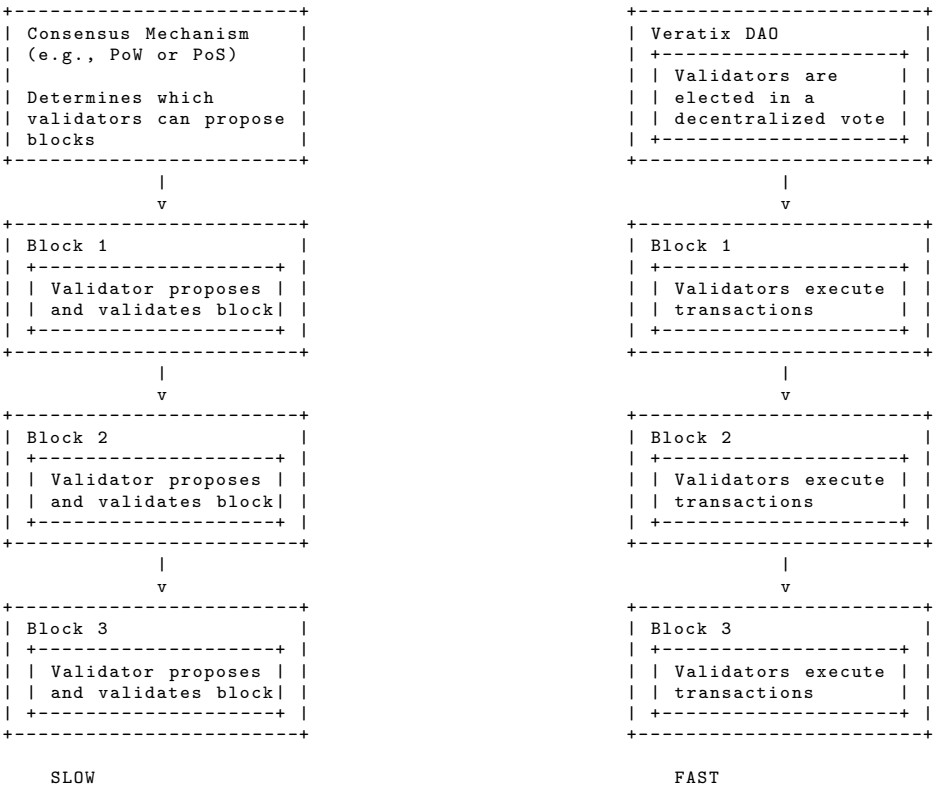
We store all our setup information in the Veratix DAO (Distributed Autonomous Organization), which is hosted on Ethereum and is periodically reviewed and approved by DAO members. This approach ensures decentralized control while maintaining performance comparable to centralized systems.

A prototype DAO implementing the above is linked from our website.

4.4 What Layer is Veratix?

We're Layer 1 in some parts and Layer 2 in others, so let's say Layer $1\frac{1}{2}$.

4.5 Blockchains HATE This One Weird Trick



4.6 Implementation

Check out the full whitepaper for a more detailed look.

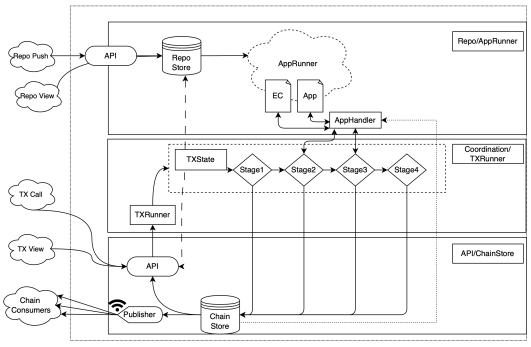


Figure 1: Architecture Overview

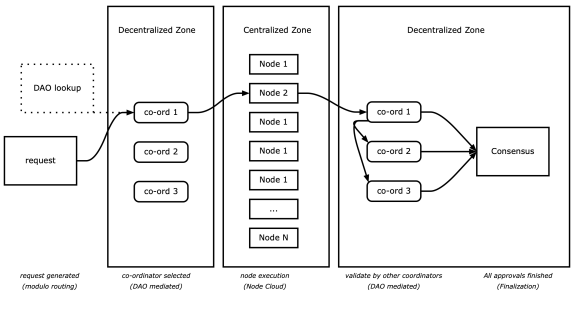


Figure 2: Decentralized/Centralized Flow

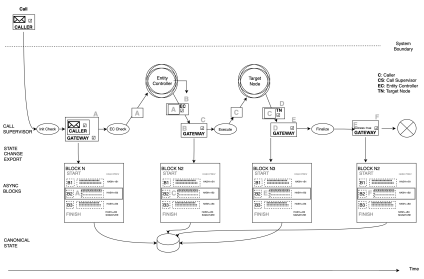


Figure 3: Internal Architecture

5 The Plan

5.1 Vision

Our vision is to completely revolutionize blockchain payments. We aim to achieve:

- **Micropayments** - one-click safe payment from a browser/phone
- **Pull Payments** - ultra-safe subscriptions drawing from a stablecoin
- **Pay As You Go** - bypass heavy credit card subscriptions
- **2FA and Easy Multisig** - set rules about how much security applies at each spending level

The last three are currently the domain of large legacy payment providers; the first has never been meaningfully achieved. This is our vision for Veratix to fulfill.

5.2 Progress

We have made substantial progress since starting research in 2022 and development in 2023. We have a fully operational beta program up and running and seek to open it to the public in the second half of 2024.

Since we were building a completely new execution environment, free from past restrictions, we included many useful new features. For example, you can develop applications ("smart contracts") for Veratix in any programming language and deploy it via git. There are organizations and groups to manage permissions, and an integrated repo to push to and view code. And we have built a fast, simple HTTP/REST API for the most common payment functions.

Further details about our work to date can be found in the full whitepaper.

5.3 Timeline

We have made substantial progress de-risking and prototyping the core technology. As such, we promise a far more accelerated introduction timeline than a typical new blockchain. See Table 1.

1H/22	R&D Start	Complete
2H/23	Development Start	Ongoing
1H/24	MVP Complete	Alpha Complete
	Funding Outreach	
3Q/24	Engineering Team Growth & Beta Development	-
	Community Outreach & Development	
4Q/24	Initial Testnet Golive (V1)	-
1H/25	Testnet GA	
	DAO Inauguration	Design
	Early Adopter Onboarding	
2H/25	Production Beta	-
	Red/Blue Validator Team Designation	

Table 1: Development & Release Timeline

6 Governance

The tokens control the DAO, and the DAO elects the validators. Half the fees from the validators go to the teams running them, and half go to the organization.

The process works by proposing a new Epoch. This is essentially a config file that contains all the information delegated to the DAO:

- Validator public keys, IP/DNS information, and their total count
- Fee splits and fee regime
- Software and protocol version in force
- Block rate in force

The epoch also contains its start and end timestamps, and the DAO itself maintains the full history of epochs, providing an indelible reference for re-validation regardless of the current context.

This governance mechanism, known as Delegated Proof of Stake (DPoS), is not conceptually new and has been proven in other chains like EOS and TRON. Veratix will build on and refines this process in coordination with its DAO to integrate the unique performance needs of its own network, such as its requirements around global server positioning and inter-node latency.

7 Tokenomics

Tokenomics are simple in Veratix. There is no staking needed for the operation of the system, but we place the token front and center in the ecosystem.

Firstly, tokens hold one vote in the DAO, which is the seat of absolute control over Veratix.

Secondly, tokens attract a discount for use of the system, via the below formula:

$$f(t) = \frac{1}{1 + e^{-k\left(t - \frac{2^{24}}{k}\right)}}$$

What this shows is that tokenholders' discount asymptotically approaches 1 as the number of tokens held approaches the total supply. For heavy users, this discount represents great value and incentivizes holding tokens.

Thirdly, tokens will attract an unused discount credit that accrues when linked tokens are present but not in active use. This credit will reside on the Veratix chain and will be tradeable and transferable. Its operational details will be decided by the DAO when operative.

Fourthly, voting, which is an important activity for the safety and security of Veratix, attracts a participation fee.

8 The End

Thank you for your attention. If you have any questions, they are sure to be answered in the much longer full whitepaper, available on our website. If they are not, please feel free to reach out via the contact methods detailed there.

We look forward to welcoming you to the Veratix community.

9 Screenshots

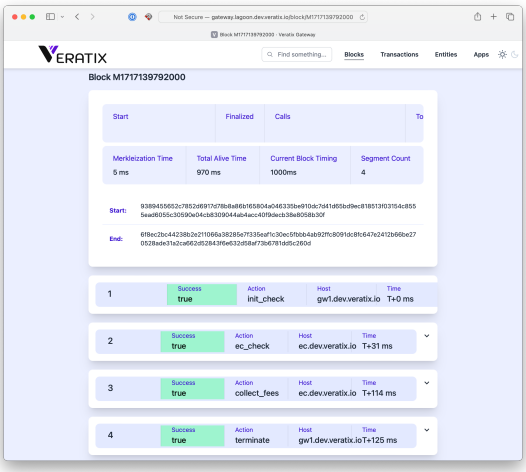


Figure 4: Block view

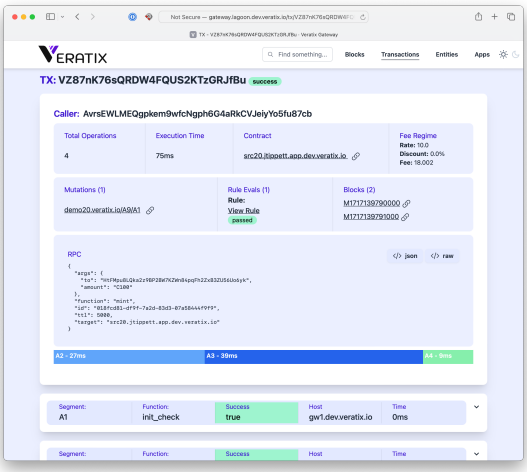


Figure 5: TX View

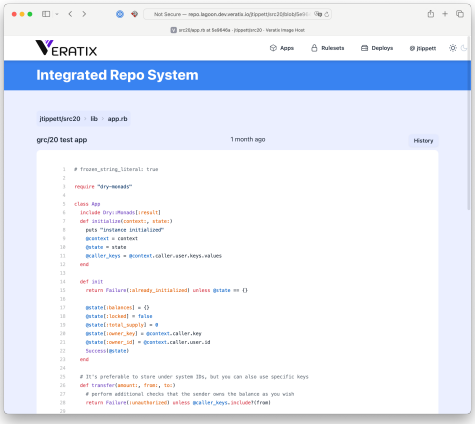


Figure 6: Code View

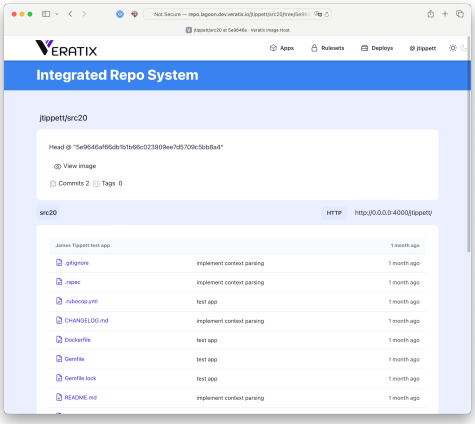


Figure 7: Code Repository