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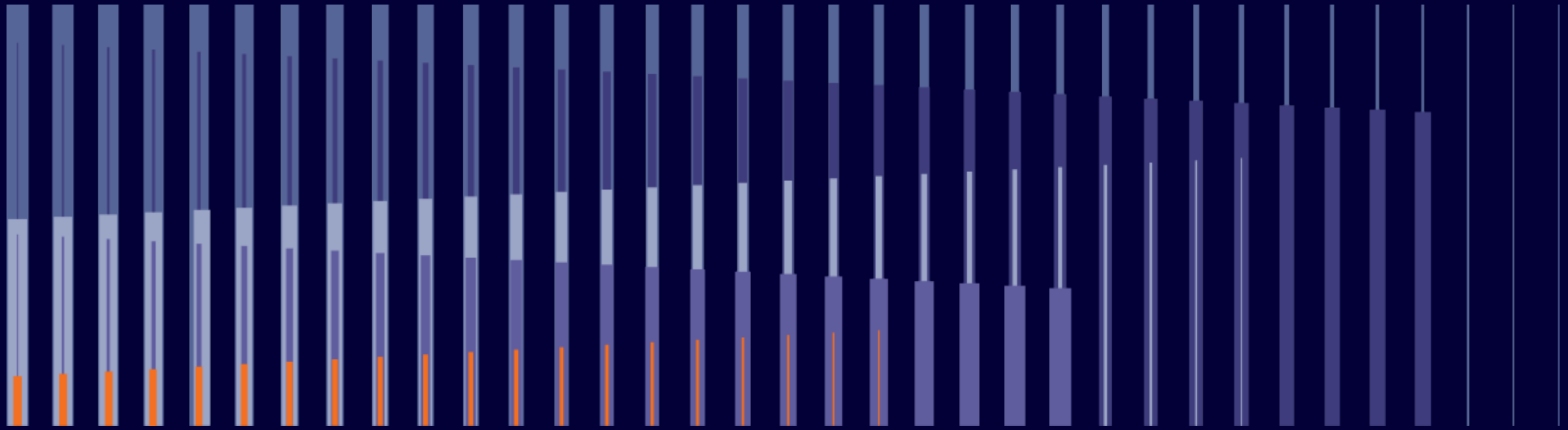
/RESEARCH

Official Report
Pyth Network



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This Hodl Research Report is written by our Research Analyst, Deni Evendik and our Content Marketing Specialist, Tobias Datema.

PROBLEM STATEMENT

The economy we operate in has changed significantly over the years. Where it once relied on commodities, our new digital economy thrives on data.

Furthermore, institutions or individuals with access to the most timely, accurate, and valuable information have a significant edge over others. In areas such as financial markets, this data advantage provides substantial opportunities. However, access to this data is often limited to a select group of institutions and users who maintain strict control over live and historical price feeds.

The digital assets market doesn't experience this problem to a full extent as most of the data is publicly available due to the transparent nature of the blockchain. However, some DeFi projects and others still need financial data from the external world. To acquire this data, these projects rely on oracles, computerized systems that connect data from the external world to digital assets and vice versa. During the summer of 2020, a group of developers noticed a gap in blockchain infrastructure, a price oracle for ultra-low-latency and institutional-quality market data.

As a result, Pyth was introduced. The protocol offers two products: Pyth Price Feeds and Pyth Benchmarks. These products are permissionless, transparent, low-latency, high-fidelity, and are designed to scale with the growth of Web3 itself. Furthermore, the two products are available across 75 blockchains.

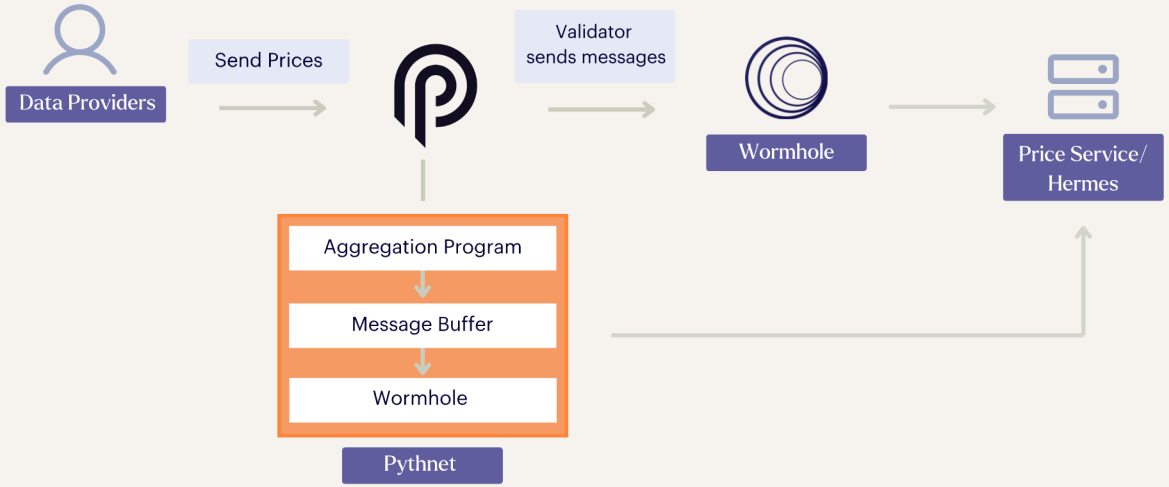
SOLUTION

Pyth Network provides a next-generation Oracle solution to bring this valuable financial market data to the general public.

This creates an equal playing field for financial and digital asset participants while creating more efficient markets. The Pyth network achieves this by offering two products: Pyth Price Feeds and Pyth Benchmarks.

The Pyth Network provides over 350 low-latency price feeds for cryptocurrencies, FX rates, equities, ETFs, and commodities, with updates every 400ms to closely track market prices. Each feed includes a spot price and a confidence interval, showing the range in which data providers believe the true price lies. This confidence value helps data users assess price accuracy, with adjustments made based on liquidity, enabling safer smart contract operations.

Pyth Benchmarks allow users to access historical price data from Pyth Price Feeds, serving as financial standards for guiding decisions and settling payouts. Examples include Bitcoin reference rates, indices like the S&P500, and rates such as LIBOR. Pyth Benchmarks standardize calculations for consistent valuation and settlement, commonly used in decentralized options vaults (e.g., Aevo on Ethereum) and for backfilling prices in perpetual trading (e.g., Synthetix on Optimism). **This is all achieved through Pyth's unique network architecture.**



Source www.pyth.network/blog/what-is-the-pyth-network

TECHNOLOGY (1/3)

The Pyth Network is a decentralized data platform designed to provide reliable, real-time pricing information for digital assets. It operates with three key components: data providers, the Pyth Protocol, and Pythnet.

The interaction between these components forms the backbone of the system, enabling accurate and reliable price feeds for the digital asset industry.

Data Providers: The foundation of the Pyth Network is its data provider community, which includes global exchanges, trading firms, market makers, institutional players, and decentralized participants.

These data providers are responsible for generating and owning the pricing data, and they are incentivized with rewards for their contributions. They specialize in providing two types of price data: the tradable price from exchanges and the most recent transaction price from traders. These multiple data inputs ensure the reliability and robustness of the network's pricing data.

Pyth Protocol: The Pyth Protocol aggregates the pricing data from the data providers to produce a unified price for each asset, complete with a confidence interval, updated every 400 milliseconds. This aggregation process occurs on an application-specific blockchain known as Pythnet.

For example, in the case of BTC/USD, various data providers submit their price and confidence interval estimates for Bitcoin. Pythnet consolidates these inputs to create a single aggregate price and confidence band, like $30,000 ± $5.

By using multiple data sources, the protocol ensures accuracy and reliability. The aggregation algorithm is designed to handle outliers, avoid manipulation, and appropriately weigh data based on each provider's accuracy. This robust approach ensures that users receive trustworthy price data with a clear confidence interval.

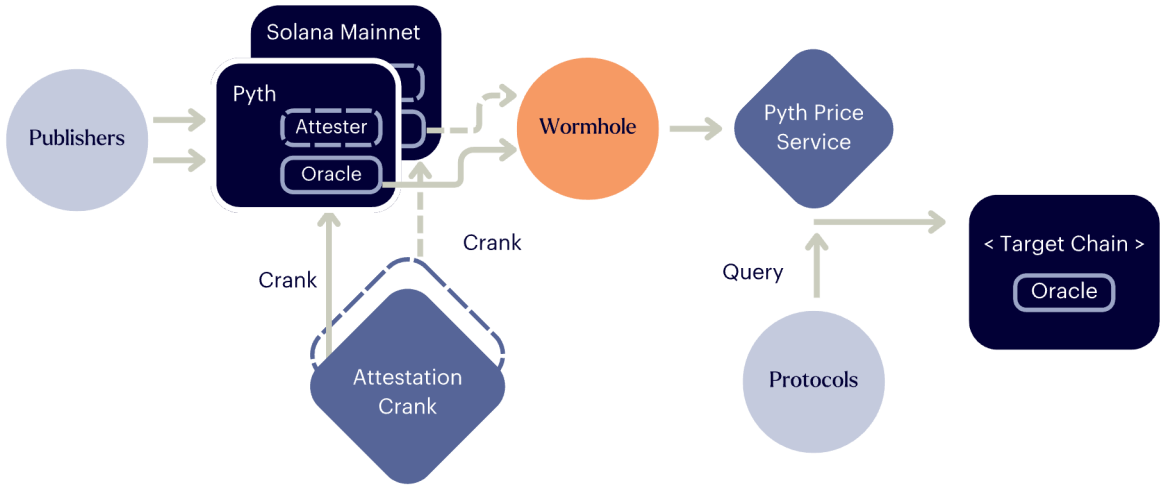
TECHNOLOGY (2/3)

Pythnet is an independent blockchain built on the **Solana** codebase, operating as a **proof-of-authority chain.**

It processes data from providers at sub-second speeds, combining their inputs into a unified price. The reason for choosing Solana's infrastructure is its capability to handle thousands of transactions per second with fast finality and a short slot time of 400 milliseconds. This enables Pyth price feeds to update faster than most other Layer 1 blockchains.

Launched in August 2022, Pythnet supports Pyth's price feeds and operates separately from Solana's mainnet. While both Pythnet and Solana host Pyth's oracle program, each network manages its own set of price feeds. The operational independence of Pythnet ensures that the reliability of Pyth price feeds is unaffected by the performance of Solana's mainnet.

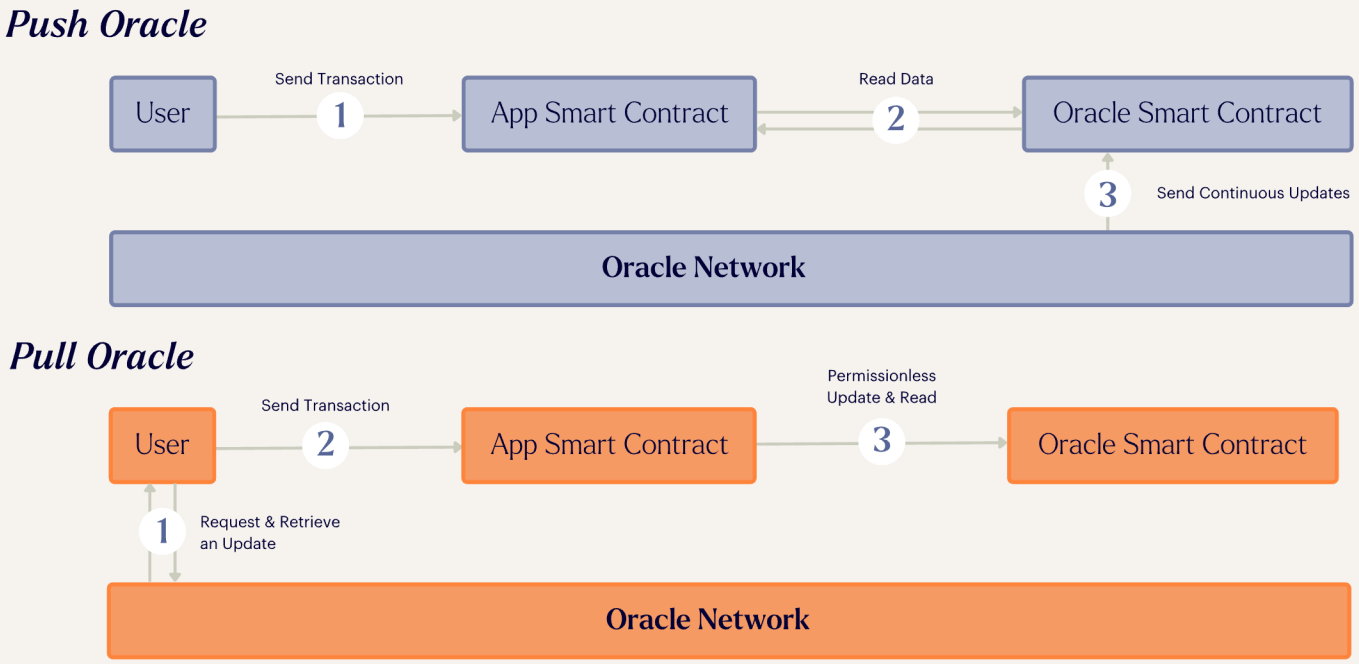
Aggregation and Distribution via Wormhole: Pythnet streams the aggregated price data off-chain through **Wormhole**, a cross-chain messaging protocol that allows decentralized applications (dApps) to access Pyth's price feeds across multiple blockchains. Once the price data is aggregated, it is signed to ensure authenticity and streamed through Wormhole for further use. This cross-chain distribution mechanism enables Pyth's data to be used across various decentralized finance (DeFi) applications.



Source insitesh.medium.com/enabling-every-asset-price-multi-chain-a-pyth-network-deep-dive-beae2b6ec7f6

TECHNOLOGY (3/3)

The biggest technology innovation in Pyth is its **Pull Method** vs. **Traditional Push Model**



Source docs.pyth.network/price-feeds/pull-updates

Most oracles in the digital asset space operate using a “push” model, where the oracle continuously sends price updates on-chain.

Pyth, however, uses a "pull" model that delegates the process of submitting price updates to the users. Pyth’s price updates are created on Pythnet and broadcast via Wormhole, but any user can submit these updates to the Pyth on-chain program.

This permissionless method allows any user to update the price on-chain by submitting a valid Wormhole message. Typically, users will submit a single transaction that both updates the price and uses it in a downstream application, ensuring a seamless integration of price data into the broader DeFi ecosystem.

ECOSYSTEM

Blockchains

Solana

BNB Chain

Publishers

Jane Street

Wintermute

Derivatives

Jupiter

Kwenta

Synthetics

Synthetix

zkSynth

Borrow-Lending

LayerBank

OmniBTC

COMMUNITY

Since its founding in 2020, Pyth network has witnessed its community grow significantly, especially as it potentially challenges the status quo among Oracles in which Chainlink is still currently leading.

230K

X

The biggest social channel for Pyth is X, formerly known as Twitter, with over 230,000 followers.

77K

Discord

Pyth's community has grown extensively and they have amassed over 77,000 users in Discord.

+75

Blockchains

The network also supports over 75+ blockchains, creating an incredible reach.

+110

Data Publishers

TPyth network has created an impressive ecosystem of trusted partners. These partners include data providers such as traditional financial institutions CBOE and Jane Street.

MEET THE TEAM

Michael Cahill

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- Vice President, FX Sales at Morgan Stanley
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Ciaran Cronin

CO-FOUNDER & COO

- European Head of Treasury at Jump Trading LLC
- MSc in Financial Economics at University College Cork

TOKENOMICS

The Pyth token has a total supply of 10,000,000,000, which is distributed among various categories: Ecosystem growth, publisher rewards, protocol development, private sales, and community and launch.

Each category follows a similar vesting schedule, with locked tokens being unlocked after 6, 18, 30, and 42 months after the token launch, 20 November 2023. At the token launch, the network started with an initial circulating supply of 1,500,000,000 tokens, 15% of the max supply.

Ecosystem Growth

52% of the total supply — 5,200,000,000 PYTH

At the token launch, 700,000,000, 7% of the max supply, Pyth tokens were released. The remaining tokens, 4,500,000,000, experience 4 unlocking periods at 6, 18, 30, and 42 months after launch. Unlocking 1,125,000,000 Pyth tokens at each interval.

Publisher Rewards

22% of the total supply —- 2,200,000,000 PYTH

At the token launch token, 50,000,000, 0.5% of the max supply, Pyth tokens were released. The remaining tokens, 2,150,000,000, experience 4 unlocking periods at 6, 18, 30, and 42 months after launch. Unlocking 537,500,000 Pyth tokens at each interval

Protocol Development

10% of the total supply — 1,000,000,000

At the token launch token, 150,000,000, 1.5% of the max supply, Pyth tokens were released. The remaining, 850,000,000, experience 4 unlocking periods at 6, 18, 30, and 42 months after launch. Unlocking 212,500,000 Pyth tokens at each interval.

Private Sales

10% of the total supply — 1,000,000,000

At the token launch token, no Pyth tokens were released. The remaining, 1,000,000,000, experience 4 unlocking periods at 6, 18, 30, and 42 months after launch. Unlocking 250,000,000 Pyth tokens at each interval.

Community and Launch

6% of the total supply — 600,000,000

All 600M PYTH Tokens of the “Community and Launch” allocation will be unlocked from day one.

TOKENOMICS ANALYSIS

When analyzing Pyth's tokenomics, several elements stand out. First, there isn't a dramatic concentration of assets in any one area; the allocations appear fairly balanced. For instance, a 10% allocation toward private sales is typical, and notably, 84% of the max supply is directed toward ecosystem and protocol development or rewards, which is substantial.

However, the vesting schedule raises concerns from an inflationary perspective. In just three and a half years, 85% of the max supply will be unvested, though these tokens won't immediately flood the market, as most are allocated for development. Nevertheless, these tokens could eventually be sold, contributing to selling pressure.

During the first token unlock, six months after launch, 2.125 billion Pyth tokens became unvested, increasing the circulating supply by 141%. While this inflation will slow over time, the unvested amounts remain significant.

COINMETRICS

Insights into *Pyth Network*

- Token type: SPL token
- Current circulating supply: 3,624,988,786

General

Total supply	10,000,000,000
Maximum supply	10,000,000,000
Market cap	$1.858.172.715
Fully diluted market cap	$5.126.009.552

Pricing

Price in USD	$0,512
All-time high in USD	$1,20
All-time low in USD	$0,2235

On-chain data

Holders	333,869
Top 100 Holders	(90.64%)
Total Value Locked	$7,694b

FINAL CONCLUSION

General remarks

Pyth Network stands out in the competitive oracle landscape due to its more innovative technology, specifically designed for ultra low-latency, real-time price feeds, and transparency.

Pyth's pull-based model, where users request price updates rather than having constant pushes from the oracle, significantly reduces costs and enhances scalability.

Additionally, its ability to aggregate first-party data from established financial institutions provides a high level of trust and reliability. The use of confidence intervals, which help ensure continuous price feed availability during volatile market conditions, further solidifies its standing as a top solution for DeFi applications.

Challenges

As a relatively new player in the Oracles market sector, Pyth has less market adoption compared to Chainlink, which has been in operation for longer and supports a broader range of applications beyond finance. Chainlink also holds a strong market position in terms of total value secured and ecosystem partnerships, resulting in a stronger need for a competitive advantage for Pyth to succeed. Although this is a challenge, It also opens up opportunities in terms of the high potential gain in market share of the sector.

While the vesting periods with the large number of tokens that will gradually enter the market may exert selling pressure in the future, they are strongly focused on ecosystem and protocol development, which helps the growth of the whole Pyth ecosystem. Additionally, the way the tokens are released in the vesting schedule reduces the risk of a continuous influx of tokens into circulation and potential selling pressure.

Long-term investment

Although Pyth is a relatively new player in the Oracles market sector, it's increasing rapidly in terms of total value secured as it rose from ~4% to ~9% in 2024, securing over $4b. Another interesting metric is that it already has become the second largest oracle in total volume secured, approximately ~35 billion in 30 days. So, it's a really upcoming and strong player in the oracle sector.

From a long-term investment perspective, Pyth Network offers both opportunities and risks. The release of tokens in the extended vesting schedule means that supply will increase in a controlled and foreseeable manner. This could mean that strategic positioning and anticipating on key unlock events may have favorable results due to the lower free float of Pyth tokens in the market.

Moreover, Pyth's strong focus on DeFi, combined with its unique technological capabilities, places it in a favorable position to benefit from the continued expansion of decentralized financial services. Its growing ecosystem of dApps and partnerships, along with tokenomics strongly designed to support ecosystem growth and development, bodes well for its long-term outlook.

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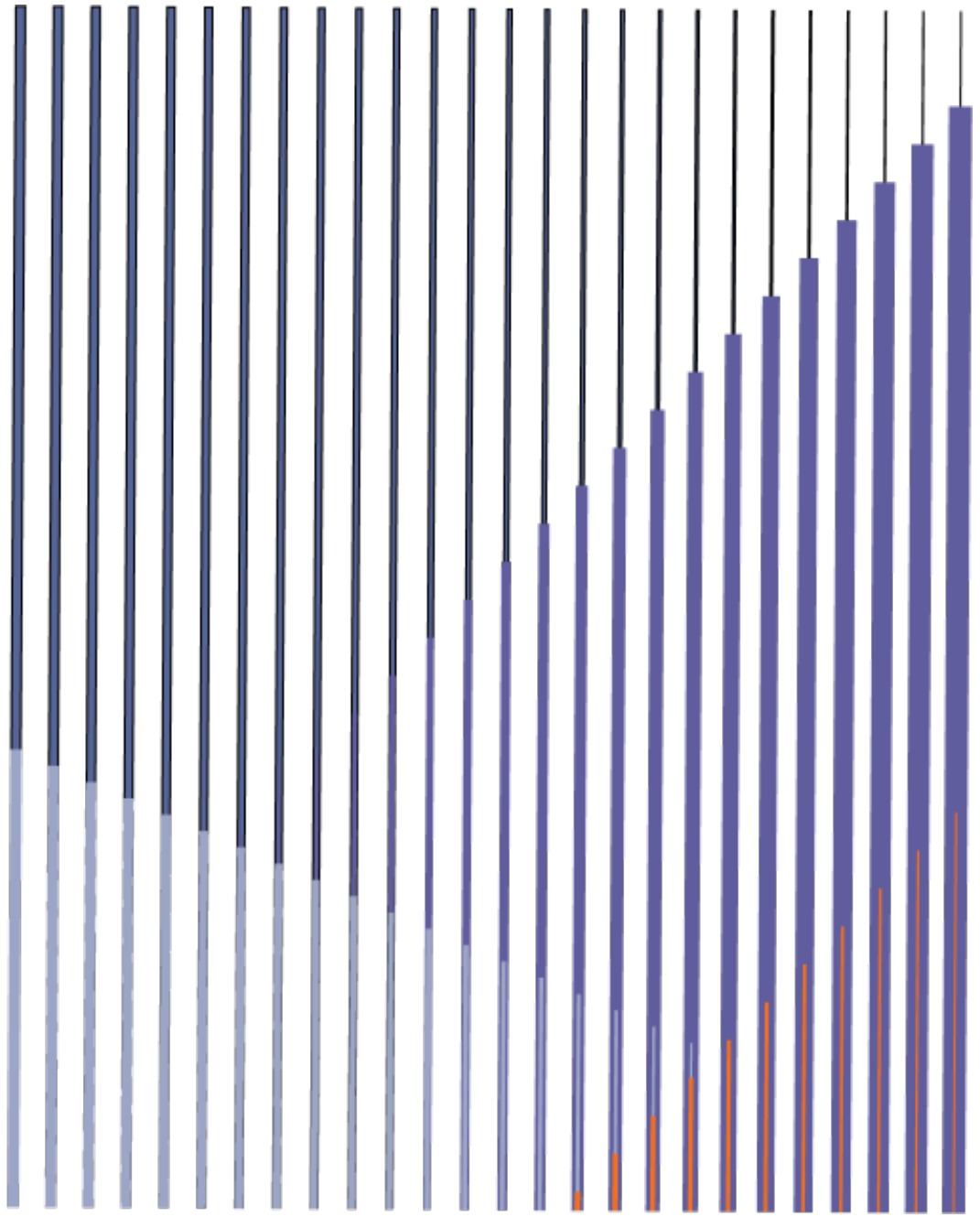

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