



NETHERMIND CLIENT

About Nethermind Client

The Nethermind Ethereum Execution Client, built on .NET, delivers industry-leading performance in syncing and tip-of-chain processing.

With its modular design and plugin system, it offers extensibility for new chains and features. As one of the most adopted Execution Clients on the Ethereum mainnet, Nethermind plays a crucial role in enhancing the diversity and resilience of the Ethereum ecosystem.

The Ethereum Execution Client Adoption



Battle-Tested Execution Client



EXPERIENCE

Robust Core Development Team

With 7 years of continuous development and experience navigating through multiple network upgrades, the Nethermind Core team of 20+ developers is focused on further improvements and innovation.



TRUST

Leading Ethereum Execution Client

According to [supermajority](https://supermajority.info), Nethermind is the most adopted client. It has been battle-tested by the largest staking companies.



RELIABILITY

Supermajority Client on Gnosis Chain

Gnosis Chain relies on Nethermind as its supermajority client. It has been running seamlessly for years without any downtime.



SCALING

Built-in support of leading L2 networks

Nethermind supports various Layer 2s, including Taiko, Linea, and OP-stack chains, with OP-mainnet and Base configurations built-in.



EXTENSIBILITY

Plugins

The Nethermind plugin system allows you to customize the node to meet specific needs, enabling changes to consensus rules and the development of custom features, EIPs, or RIPS.

Performance & Development

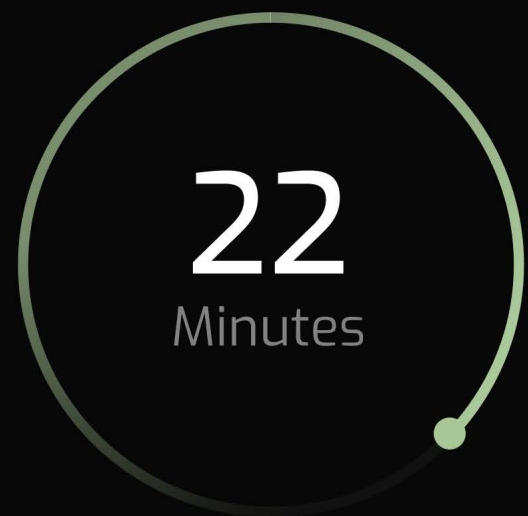
Nethermind is a high-performance client known for its excellent validator performance, fast block processing time, and rapid syncing. The team is actively working on performance improvements and optimizations. The following is a summary of the current performance and areas of development:

Block Processing



*Nethermind 1.30.0 RC achieves an average of 1007 MGas/s on Base-Mainnet with high-end consumer hardware (AMD Ryzen 9 9950X, Samsung 990 PRO 4TB PCIe 4.0 x4 NVMe, Corsair Vengeance 192GB (4x48GB), MSI MPG X670E Motherboard)

Total Syncing Time



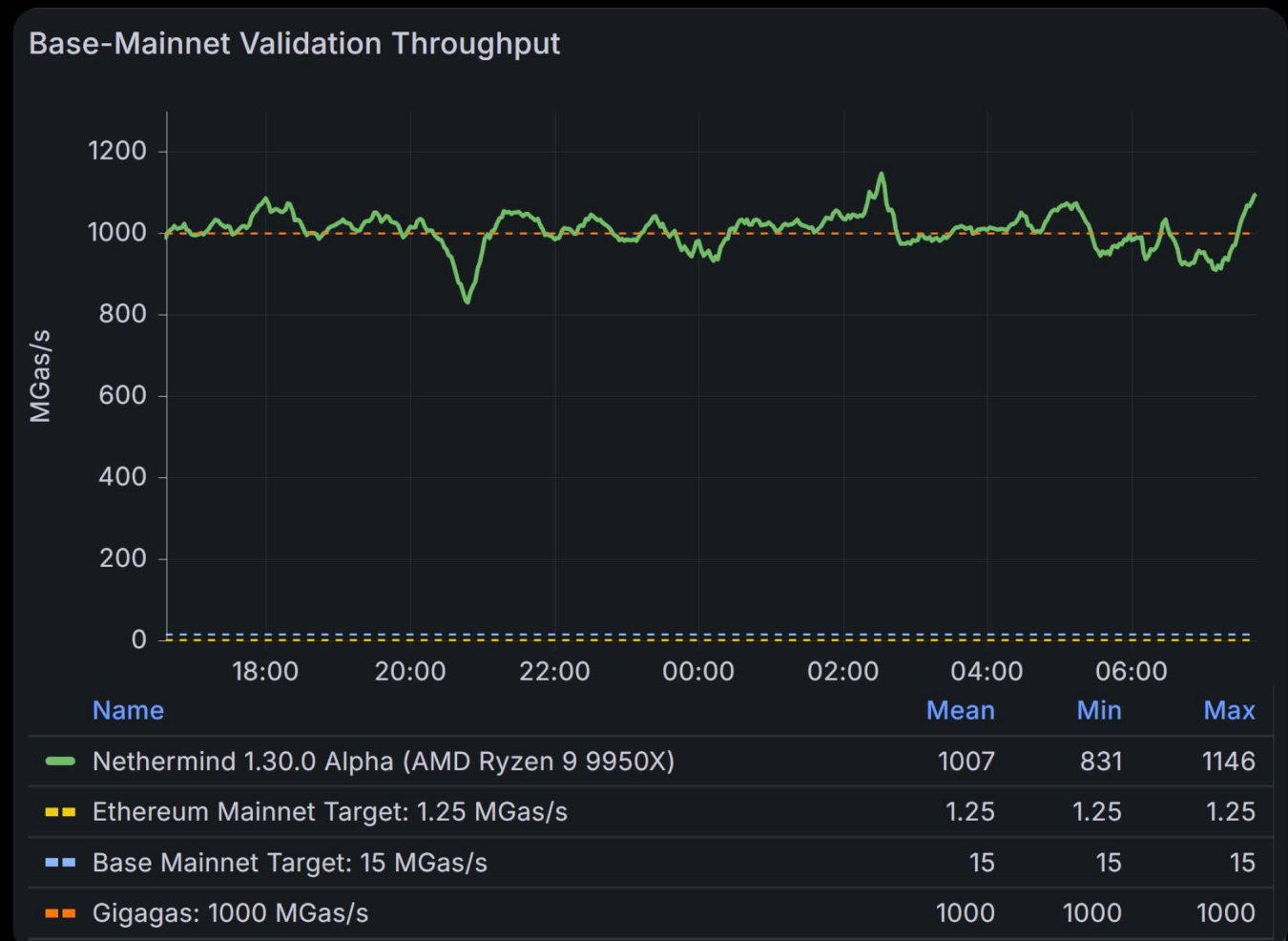
*Time to start follow the chain with snap sync, history is being downloaded in background. Hardware: Commodity hardware, AMD Ryzen 9 9950X, Samsung 990 PRO 4TB PCIe 4.0 x4 NVMe, Corsair Vengeance 192GB (4x48GB), MSI MPG X670E Motherboard

Configs



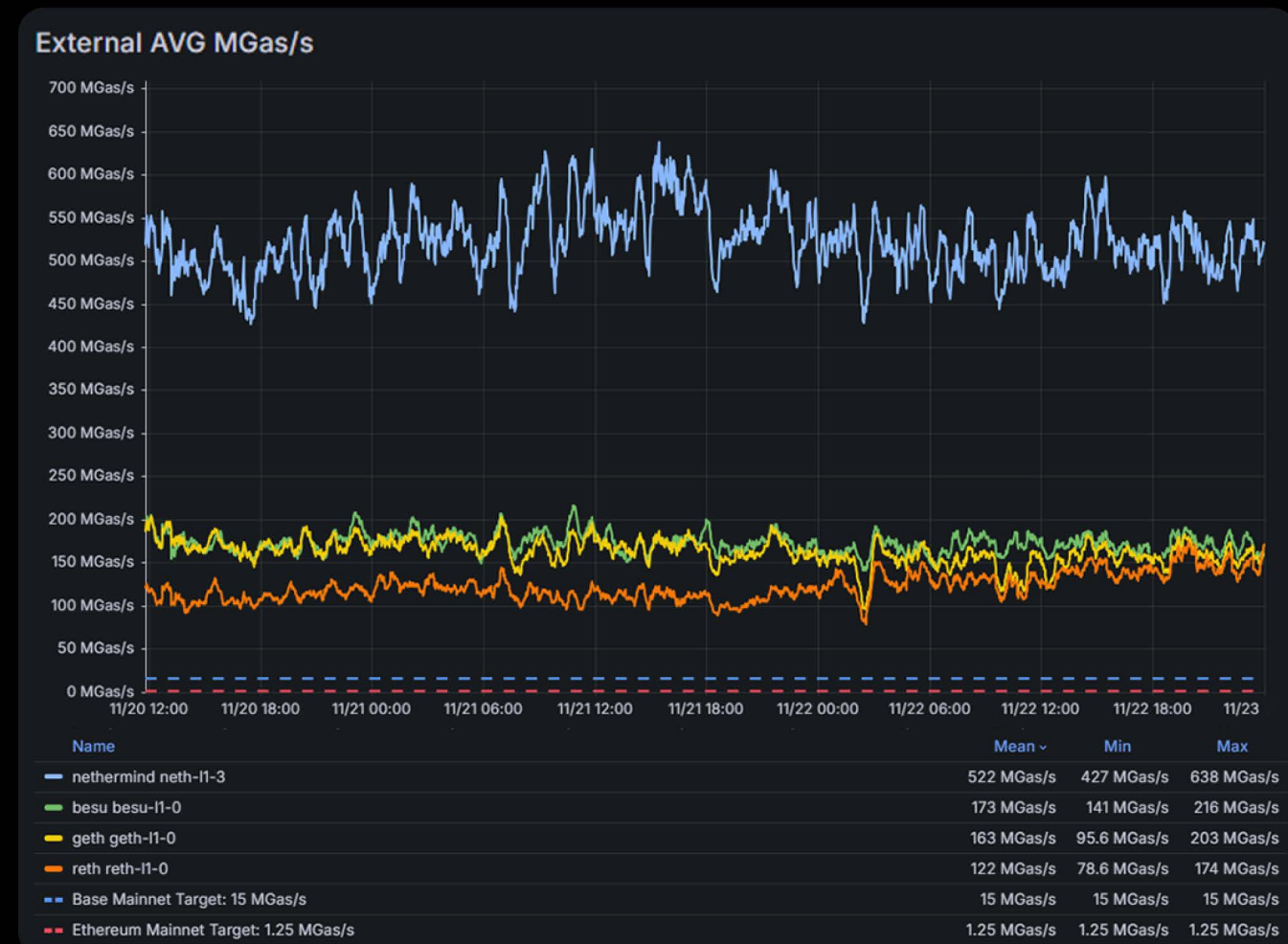
*This number reflects the chains officially supported by the Nethermind client as listed in the repository. Additional chains using Nethermind exist but are not included in this count, as they are not part of the official repository.

Gigagas Performance



Network: Base-Mainnet.
Hardware: Commodity hardware, AMD Ryzen 9 9950X, Samsung 990 PRO 4TB PCIe 4.0 x4 NVMe, Corsair Vengeance 192GB (4x48GB), MSI MPG X670E Motherboard
Cost: 280 USD/month on reliablsite.com OR around 3000 USD standalone

Execution Client Benchmarks



Network: Ethereum Mainnet
Hardware: c2d-highmem-4 - 4 vCPUs, 32 GB RAM, NVMe local disk
Cost: ~200 USD/month in Google Cloud

Active Research & Development



Paprika

Experimental database engine that encapsulates Ethereum's state and storage tries. It is designed to leverage blockchain-specific state operations and functionalities to maximize performance while eliminating the need for pruning.



Gas Limit Research

Exploring worst-case scenarios and potential DDoS vectors for EVM across different clients. This research has already uncovered interesting cases, which are particularly important for chains with high gas limits.



Archive Data Indexing

Super fast indexing of archive data, including state and logs, while having lowest possible disk footprint.



IL-EVM

High-performance EVM bytecode execution, utilizing contract pre-compilation to .NET's intermediate language.

More Highlights

- 24/7 engineering support available through Slack, Discord, and Telegram.
- We've developed Sedge, a tool that offers a streamlined node setup through a CLI wizard.
- Leveraging the expertise of Nethermind's Research & Engineering teams, experienced in working with high-profile institutional clients.
- Close collaboration with Nethermind's DevOps team, experienced in the operation of a large set of validators and providing infrastructure management to institutions.
- Custom-built tools, diverse testing methods (synchronization tests, performance tests, cross-client tests, stress testing, and node stability testing).



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