



# Sei Report

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# Table of Contents

What is Sei, and how is it unique?

04

The L1 landscape and Sei’s positioning

06

Exploring the ecosystem & future developments

07

Valour SEI SEK

08



# What is Sei, and how is it unique?

Sei is a purpose-built Layer 1 (L1) blockchain designed to address the specific needs of decentralized applications (dApps) and the broader Web3 ecosystem. Unlike general-purpose blockchains that prioritize flexibility, Sei has carved out a niche as an optimized network for high-performance applications, particularly those requiring fast transaction processing and deterministic finality.

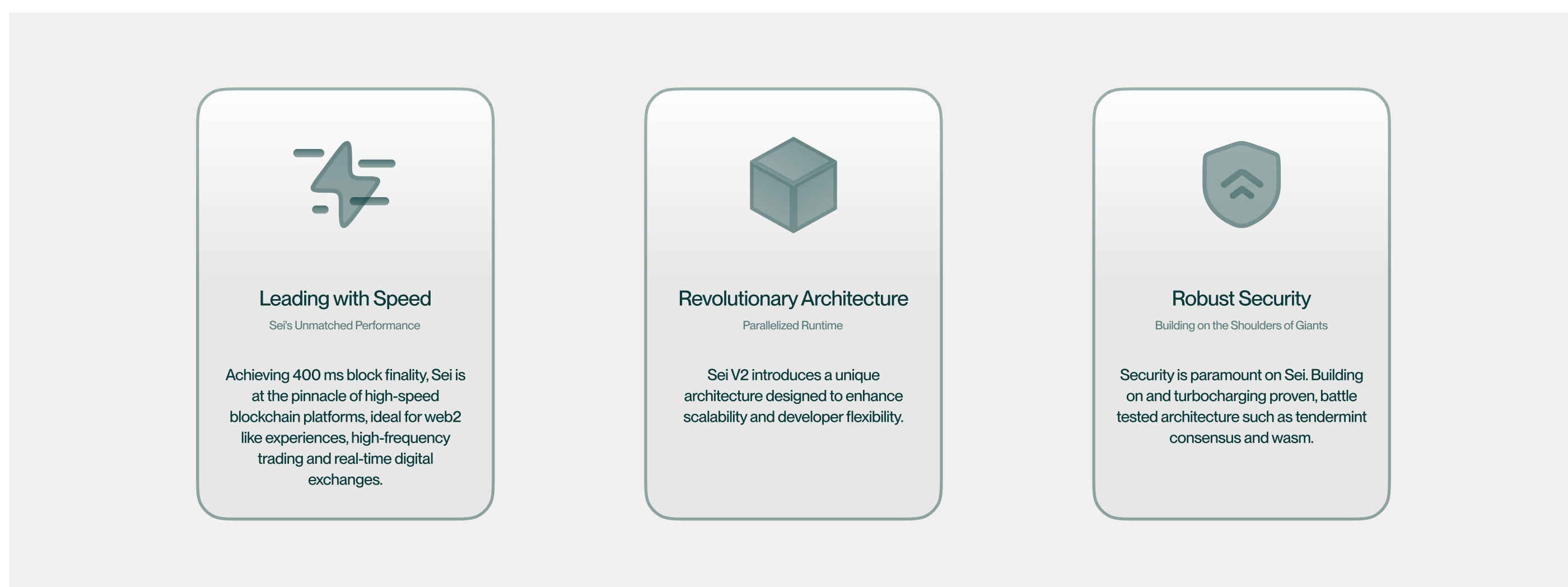
This focus positions Sei as a pivotal player in the next generation of blockchain-based systems in a sea of many L1s and L2s.

Sei's unique approach lies in its focus on providing a dedicated environment for decentralized exchanges (DEXs) and financial applications. The network is engineered to handle the high throughput and low latency demands of trading platforms.

By integrating native features like on-chain order matching and advanced risk management tools, Sei enables developers to build applications that perform at the level required by sophisticated financial markets, while remaining decentralized and secure.







Another critical aspect of Sei's architecture is its integration of the Cosmos SDK. By leveraging the Cosmos ecosystem's interoperability protocols, Sei connects seamlessly with other blockchains, enabling the transfer of assets and data across networks. This interoperability is central to Sei's vision of creating a connected blockchain ecosystem where users and developers can move freely between platforms without friction.

Sei's consensus mechanism is also noteworthy. It employs Tendermint Core, a Byzantine Fault Tolerant (BFT) consensus protocol that ensures the network remains secure even in the presence of malicious actors. Tendermint's efficiency supports Sei's emphasis on speed and scalability, ensuring that the network can handle a growing number of users and applications without degrading performance.

The Sei network incorporates a built-in order book module, a feature that sets it apart from other Layer 1s. This module provides developers with a ready-made infrastructure for creating decentralized exchanges and other financial dApps. By standardizing key components like matching engines and risk controls, Sei reduces development overhead and accelerates time-to-market for new projects.

Sei's tokenomics are designed to align incentives across all participants in the ecosystem. The native token, SEI, serves a few distinct roles, including governance, staking, and transaction fee payments. By participating in network governance, SEI holders have a direct say in the protocol's evolution, fostering a collaborative and decentralized decision-making process. Additionally, staking SEI contributes to network security while rewarding participants with a share of transaction fees and block rewards.

One of Sei's standout features is its focus on user experience. The network prioritizes simplicity and accessibility, providing developers with comprehensive documentation, robust developer tools, and an active support community. This emphasis on usability lowers the barrier to entry for new developers, encouraging the growth of the Sei ecosystem.

Sei's commitment to sustainability is evident in its low-energy consensus mechanism. By utilizing Tendermint Core and avoiding energy-intensive proof-of-work algorithms, Sei minimizes its environmental impact while maintaining high levels of security and performance. This aligns Sei with the broader push toward environmentally conscious blockchain solutions.

Sei has garnered significant attention for its ability to cater to high-frequency trading and other demanding use cases. Traditional blockchains often struggle to meet the stringent requirements of HFT platforms, such as low latency and high transaction throughput. Sei's architecture is specifically designed to overcome these limitations, providing a viable alternative for traders seeking the benefits of blockchain without sacrificing performance.

In summary, Sei's unique features, including its focus on high-performance dApps, integration with the Cosmos ecosystem, and unique technical design, make it a standout player in the blockchain space. By addressing the specific needs of decentralized financial applications and building an interoperable ecosystem, Sei is well-positioned to drive the next wave of innovation in crypto.



# The L1 landscape and Sei's positioning

Sei's blockchain architecture is purposefully designed to address the limitations of other L1s, offering unique advantages that cater specifically to high-performance applications. Unlike general-purpose blockchains like Ethereum, which prioritize flexibility and support a wide array of dApps, Sei focuses on providing an optimized environment for financial and trading applications. This specialization allows Sei to deliver unmatched performance in areas such as transaction throughput, latency, and finality.



At the heart of Sei's architecture is its use of parallel transaction processing.

Most traditional blockchains process transactions sequentially, which can create bottlenecks and limit scalability. Sei's parallelization model enables multiple transactions to be processed simultaneously, significantly increasing the network's throughput. This feature is particularly important for DEXs and other applications that require real-time performance.

Sei's integration with the Cosmos SDK further enhances its appeal. By building on Cosmos' interoperable framework, Sei can seamlessly connect with other blockchains in the Cosmos ecosystem. This interoperability allows Sei to facilitate cross-chain asset transfers and data sharing, making it a key player in the broader blockchain ecosystem. In contrast, many other L1s, such as Solana or Avalanche, operate as siloed networks with limited interoperability.

The recent "Giga Upgrade" represents a major milestone in Sei's development, introducing a suite of enhancements designed to improve the network's efficiency and functionality. One of the key features of this upgrade is the implementation of faster block times, which reduces latency and improves the user experience for applications built on Sei. Faster block times are particularly beneficial for high-frequency trading (HFT) platforms, as they ensure transactions are processed with minimal delay.

## SEI - GIGA



\*TPS ESTIMATES ASSUME AN AVERAGE OF 21K GAS/TX  
\*GAS PER SECOND ESTIMATES BASED ON PARADIGM.XYZ/2024/04/RETH-PERF



The Giga Upgrade also introduces enhanced tooling for developers, including improved APIs and SDKs that make it easier to build and deploy applications on Sei. These tools are designed to lower the technical barriers for new developers entering the ecosystem, fostering innovation and encouraging the growth of a diverse range of dApps. This focus on developer accessibility sets Sei apart from other L1s, which often require specialized knowledge and expertise to build effectively.

Sei's built-in order book module is another differentiator that has been enhanced through the Giga Upgrade. This module provides a standardized infrastructure for creating DEXs, eliminating the need for developers to build complex matching engines from scratch. By offering a plug-and-play solution for order book functionality, Sei accelerates the development process and enables more projects to launch with high-quality trading features.

When compared to competitors like Solana or Avalanche, Sei's deterministic finality mechanism stands out as a significant advantage. While other blockchains may experience issues with transaction reordering or forking, Sei's deterministic finality ensures that transactions are confirmed quickly and irrevocably. This feature is crucial for applications where reliability and precision are paramount, such as financial markets and prediction platforms.

Sei's architecture also incorporates advanced risk management tools, which are essential for maintaining the integrity of financial applications. These tools include features like on-chain risk monitoring and automated liquidation mechanisms, which help to mitigate potential losses and protect users' assets. Such features are rarely integrated natively into other L1 blockchains, giving Sei a competitive edge in the DeFi space.

The Giga Upgrade has further strengthened Sei's position as a leader in the L1 landscape by introducing scalability improvements that prepare the network for increased adoption. These enhancements include more efficient resource allocation and improved consensus algorithms, which allow Sei to handle a growing number of users and applications without compromising performance. This scalability positions Sei as a viable solution for large-scale applications that demand high reliability and speed.

In the context of the broader L1 landscape, Sei's specialization and recent upgrades position it as a complementary network rather than a direct competitor to general-purpose blockchains like Ethereum. By focusing on high-performance use cases and providing tailored solutions for financial applications, Sei fills a critical gap in the blockchain ecosystem. Its unique value proposition makes it an attractive choice for developers and users seeking a network optimized for speed, efficiency, and interoperability.

As the L1 blockchain space becomes increasingly competitive, Sei's targeted approach and commitment to innovation set it apart. The Giga Upgrade underscores Sei's dedication to meeting the needs of its users and staying ahead of industry trends. By continuously refining its architecture and expanding its ecosystem, Sei is poised to play a significant role in the future of blockchain technology.

# Exploring the ecosystem and future developments

Sei's ecosystem has experienced significant growth, marked by strategic initiatives and partnerships aimed at fostering innovation and expanding its reach within the blockchain space.

The Sei Creator Fund, a \$10 million initiative, recently concluded its third and fourth rounds, focusing on the developer ecosystem and Web3 gaming, respectively. With a combined matching pool of approximately \$500,000, these rounds supported over 270 projects and individuals, emphasizing Sei's commitment to nurturing both technical development and creative media within its ecosystem.

Filament, a hybrid decentralized exchange (DEX) for derivatives, secured \$1.1 million in seed funding and launched on the Sei Network. Optimized for speed and trade efficiency in low-liquidity environments, Filament

aims to enhance the trading experience by offering advanced derivatives products, thereby contributing to the diversification and robustness of Sei's financial ecosystem.

In a bid to engage the gaming community, Sei announced "Sei GG: The Legendary Gauntlet," a three-week gaming competition with \$50,000 in prizes. This initiative underscores Sei's dedication to integrating gaming into its ecosystem, recognizing the potential of Web3 gaming as a significant driver of blockchain adoption.

Sei Labs and the Sei Foundation introduced the Sei Research Initiative, opening dialogue with third-party researchers and contributors to explore the limits of the EVM. This open-source endeavor aims to reimagine the EVM across all layers—storage, consensus, and execution—reflecting Sei's commitment to advancing blockchain technology through collaborative research.

Sei is integrated with Gravity Bridge to enhance interoperability between the Ethereum and Sei ecosystems. This integration facilitates seamless and secure cross-chain asset transfers, providing users access to a broader range of decentralized financial services and contributing to increased liquidity within the Sei network.

Levana, a platform offering high-leverage trading, launched on Sei's Layer 1 blockchain. This integration brings advanced trading capabilities to Sei's users, enabling more efficient and secure high-leverage trading. Levana's presence is expected to be a core component of Sei's expanding ecosystem, attracting traders seeking sophisticated financial instruments.

Sei unveiled its tokenomics model, detailing the roles and allocations of its native token, SEI. Serving functions such as network fees, staking, governance, and native collateral, the SEI token is integral to the network's operations. With a total supply capped at 10 billion tokens, the majority is allocated to the community and projects building on Sei, ensuring decentralized governance and incentivizing ecosystem growth.

Sei announced the Sei v2 upgrade, introducing the first high-performance parallelized EVM. This upgrade enables developers to seamlessly deploy existing Ethereum dApps on Sei, benefiting from significant performance improvements. By parallelizing the EVM, Sei aims to unlock new possibilities for scaling within the Ethereum ecosystem, offering a scalable and efficient platform for decentralized applications.



Sei's recent developments highlight its strategic focus on enhancing interoperability, increasing innovation through funding initiatives, and expanding its ecosystem with advanced financial and gaming applications. By integrating with platforms like Gravity Bridge and supporting projects such as Filament and Levana, Sei is positioning itself as a versatile and high-performance L1.

The introduction of the Sei Research Initiative and the parallelized EVM upgrade further demonstrate Sei's commitment to technological advancement and scalability. These efforts collectively contribute to Sei's growing prominence in the blockchain space, attracting developers, traders, and gamers to its ecosystem.

## Valour SEI SEK

Valour Sei (SEI) SEK is an exchange-traded product (ETP) that tracks the price of SEI, the native cryptocurrency of the Sei blockchain. Designed as a high-performance Layer 1 blockchain, Sei is optimized for trading, offering unmatched speed, scalability, and reliability. Its innovative architecture empowers decentralized exchanges (DEXs) and DeFi applications with instant finality and low transaction costs, making it an ideal platform for financial applications. With a growing ecosystem and a focus on empowering developers and users, Sei is positioned as a key player in the evolution of decentralized trading and Web3 infrastructure. SEI holders can actively participate in the network's governance, staking, and ecosystem growth, contributing to a dynamic and forward-thinking blockchain community.



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