



# WHY SOLANA NOW?

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Solana (SOL), the digital asset that powers the Solana blockchain, has experienced remarkable growth since August 2021. SOL has quickly established itself as one of the world's leading digital assets with a \$72B market cap.<sup>1</sup> The Solana blockchain is a Proof of Stake (PoS) blockchain, operating similarly to other Layer 1 blockchains such as Ethereum and Cardano. Solana also leverages a Proof of History (PoH) algorithm that solves one of the most challenging problems in distributed ledger systems: the consensus of event timestamping. A number of significant features and use cases contribute to the rising interest in Solana and its expanding ecosystem.

## SOLANA'S ADVANTAGEOUS FEATURES



### SPEED

Decentralized app developers like the speed that the Solana blockchain offers.



### LOWER COST

The Solana blockchain typically offers far lower transaction fees than currently seen on certain other smart contract blockchains.

1) Source: [Coinbase.com](https://www.coinbase.com)



## SPEED

As one of the fastest programmable blockchains, Solana has quickly become one of the most widely used blockchains and largest digital assets by market cap. With the ability to process an average of 2,298 transactions per second (TPS), it caught the attention of developers and investors as a cheaper and faster alternative to Ethereum and other smart contract platforms. However, Solana has been tested and proved capable of reaching 50,000 TPS. Experts speculate that Solana's processing speed may reach 700,000 TPS as the network advances.<sup>2</sup> With Ethereum currently processing between 15 to 45 TPS, it's easy to see why interest in this digital asset continues growing. If you are curious how Solana's blockchain is so fast, you are not alone.

Proof of history speeds up the consensus process for the Solana blockchain by allowing validators to create a historical record proving an event on the blockchain occurred at a specific moment in time using a Verifiable Delay Function (VDF). A VDF encodes time itself into the block, considerably reducing the weight of consensus, thus significantly speeding up the time required for transaction processing. A set of recorded verifiable unique outputs called a 'hash' and a 'count' serve as validation keys in the data blocks resulting from the VDF process. You may think of these hashes and the accompanying count as a verifiable cryptographic timestamp attached to each block of transactions on the blockchain.

Solana's success as a secure, scalable blockchain is made possible by its ability to cut down on time spent linearly validating nodes across the blockchain. The innovative PoH feature builds upon the PoS consensus algorithm but dispenses with its need for linear data validation. No longer

must validators expend time and energy congregating to agree simultaneously upon a time and sequence of events. Instead, validators use these unique identifiers to non-sequentially sort and order events. The network chains these historical records together, creating a proof of order relative to the unique assigned identifiers. The time saved by PoH enables record-breaking transaction processing capabilities for the Solana network.

Combining a PoS consensus mechanism with the PoH validation feature delivers a lighter, faster blockchain. The validators processing transactions run the Solana network. Validator selection considers the amount of SOL each individual has staked on the network. Nodes with the highest amounts staked are most likely to be selected to validate and add transaction blocks to the blockchain. Users holding smaller quantities of SOL can delegate their holdings to a larger validator in exchange for a portion of the validator rewards. This delegation method incentivizes both large and small shareholders of SOL to support the network. Staking requirements for achieving validator status serve as a helpful barrier of entry, deterring malicious actors from attacking the blockchain.

## LOWER COST

The Solana blockchain offers far lower transaction fees than currently seen on Ethereum. Metrics across the NFT market in October 2021 demonstrate how Solana competes with Ethereum across the industry at a lower cost. The average cost per transaction on the Ethereum network is \$49.27, while Solana's average cost per transaction rests at \$0.00025.<sup>3</sup> Solana's lower transaction cost contributed to the NFT profile pic (pfp) flipping market that has the attention of ETH and SOL speculators alike.

2) Source: [FXEmpire.com](https://fxempire.com)

3) Source: [Solana.com](https://solana.com) "Powerful for developers. Fast for everyone," Solana, last accessed November 4, 2021

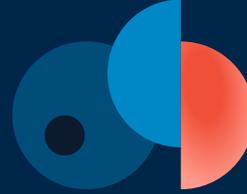


## USE-CASES OF SOLANA



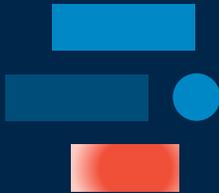
### NON-FUNGIBLE TOKENS (NFTs)

The soaring NFT market is positioning Solana as a viable alternative to Ethereum. Congestion on Ethereum's blockchain due to the number of users and transactions on the network caused gas fees to soar this summer, driving many to Solana.



### SOCIAL MEDIA

Decentralized social media platforms require high-speed, low-cost blockchains like Solana in order to scale to the masses.



### GAMING

Solana offers blockchain-based games that give access to liquidity for participants to own and earn in-game assets.



### DECENTRALIZED FINANCE

Due to many developers' preference for Solana's speed, there's an increasingly diverse ecosystem of decentralized finance (DeFi) apps powered by SOL.



## **SOLANA AND NON-FUNGIBLE TOKENS (NFTs)**

Solana's roster of decentralized apps now includes a diverse ecosystem of over 400 projects spanning decentralized finance (DeFi), Web 3.0, NFTs, and more. These project categories include decentralized exchanges, lending protocols, staking platforms, online gaming, social media, storage solutions, and metaverse platforms. The technical sophistication of Solana attracts DeFi developers looking for faster and cheaper networks on which to build and operate their apps. And while Solana's initial goal was to support decentralized apps, it has also found accelerated popularity across the NFT market as an alternative to Ethereum.

The NFT market and the greater digital asset class are progressing rapidly, and we believe that is setting the stage for Solana to continue gaining market share. The Degenerate Ape project was a significant catalyst for Solana's rise this summer. Their NFT volume reached a total of 982K SOL as of November 1, 2021.<sup>4</sup> Popular NFT marketplaces like OpenSea are likely to enable SOL NFT sales in the future. Meanwhile, Solanart.io, a leading SOL NFT marketplace, approaches \$1B in volume since inception<sup>5</sup>, and total NFT secondary sales volume on Solana is over \$500M<sup>6</sup>, signifying the eagerness amongst NFT collectors to transact in SOL. Other NFT projects using SOL include Aurory with 526.6K SOL in trades and SolPunks with 404.6K SOL.<sup>5</sup>

Across the NFT market, Ethereum's NFT ecosystem saw 130K unique buyers and 102K unique sellers during October 2021, while Solana hosted 35% of Ethereum's unique buyer numbers and over 50% of the unique sellers.<sup>4</sup> These numbers are positive signs for Solana user adoption in the more mainstream NFT market.

## **EARLY DAYS FOR SOLANA**

One potential risk in the Solana blockchain versus other Layer 1 involves the Solana Foundation potentially running a disproportionate amount of validators. However, since these are still Solana's early days, others argue that large numbers of validators are necessary to get such a large project up and running. It is plausible that Solana becomes more decentralized over time as the network grows in popularity.

Solana has proven that a faster blockchain does not have to mean higher gas prices. And the network is gaining traction as a host for Web 3.0 social networks and digital gaming apps. Time will tell if other blockchains will follow Solana's PoH consensus approach. But as one of the first movers on the market solving the challenge of time required for simultaneous network consensus, Solana demonstrates what scalability can look like on a modern blockchain.

4) Source: Messari Report as of 11/1/21

5) Source: [Solanart.io](https://solanart.io)

6) Source: [CoinTelegraph.com](https://cointelegraph.com)



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