# Blockchain Platform Comparison and Analysis

## Comparison Table

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Blockchain Name | Type | Consensus Mechanism Used | Permission Model | Speed / Throughput | Smart Contract Support | Token Support | Typical Use Case | Notable Technical Feature |
| Ethereum | Public | Proof of Stake (Eth 2.0) | Open | ~15–30 TPS | Yes (Solidity, Vyper) | Native (ETH) | DApps, NFTs, DeFi | EVM, large developer ecosystem |
| Hyperledger Fabric | Private | Pluggable (default: Raft) | Permissioned | 1000+ TPS (configurable) | Yes (Go, JavaScript, Java) | No native token | Enterprise supply chain, healthcare | Channels for private transactions |
| Quorum | Consortium | Istanbul BFT, Raft | Permissioned | 100–200 TPS | Yes (Solidity via Ethereum) | Optional | Financial consortia, trade finance | Privacy layers on Ethereum-compatible chain |

## Short Report

The three blockchains—Ethereum (public), Hyperledger Fabric (private), and Quorum (consortium)—offer distinct technical capabilities suited to different use cases. Ethereum, as a public chain, provides decentralized consensus with a global validator pool via Proof of Stake, smart contract support in Solidity, and native token usage, making it ideal for open applications like decentralized finance (DeFi) and NFTs.  
  
In contrast, Hyperledger Fabric is optimized for enterprise settings where participants are known. Its permissioned structure, pluggable consensus, and high throughput make it ideal for internal organizational networks. It doesn’t have a native token and instead focuses on data privacy, scalability, and modularity.  
  
Quorum, as a consortium blockchain, bridges the gap between public and private by using Ethereum compatibility while enhancing privacy and governance controls. It supports permissioned access, is suitable for financial consortia, and enables inter-bank operations with privacy features.  
  
Platform Choices:  
- Decentralized App: Ethereum — open access, strong smart contract and token support, global reach.  
- Supply Chain Network (known partners): Hyperledger Fabric — high throughput, permissioned access, and private channels.  
- Inter-bank Financial Application: Quorum — financial-grade privacy, Ethereum compatibility, and consortium governance.  
  
Each platform shines in its niche, with trade-offs between decentralization, performance, and privacy.