Blockchain Name	Ethereum	Hyperledger Fabric	IBM Food Trust
Type	Public	Private/Consortium	Private/Consortium
Consensus Mechanism Used	Proof-of-Stake (PoS)	Pluggable (e.g., Raft, Kafka, SmartBFT)	Pluggable (inherits from Hyperledger Fabric)
Permission Model	Open	Permissioned	Permissioned
Speed / Throughput	~15-30 TPS (L1); Thousands TPS with Layer 2s (Rollups)	Hundreds to 100,000+ TPS (with Fabric-X and ARMA consensus)	High (leveraging Hyperledger Fabric capabilities, e.g., trace times in seconds)
Smart Contract Support	Y (Solidity, Vyper)	Y (Go, Node.js, Java)	Y (Go, Node.js, Java - via Hyperledger Fabric chaincode)
Typical Use Case	Decentralized applications (DApps), DeFi, NFTs, DAOs	Supply chain, finance, healthcare, enterprise solutions requiring privacy	Food supply chain traceability, safety, and sustainability
Notable Technical Feature	Turing-complete EVM, largest developer ecosystem, extensive tooling, ongoing "Surge" for scalability	Modular architecture, private channels, "need-to-know" data sharing, scalable BFT consensus	End-to-end supply chain visibility, data ownership and permissioning, built on open-standard Hyperledger Fabric

REPORT

In this report we compare the technical capabilities of Ethereum, Hyperledger Fabric, and IBM Food Trust, and recommend platform specific use cases.

Ethereum is a public, open, and permissionless blockchain that uses Proof-of-Stake consensus. It supports a huge ecosystem of decentralized applications (DApps) and smart contracts (Solidity, Vyper). It puts transparency and censorship resistance first, and Layer 2 solutions help it handle more traffic.

Hyperledger Fabric is a private blockchain that only some people can use. It has pluggable consensus mechanisms like Raft and SmartBFT. It enables confidential transactions through private channels and supports smart contracts (Go, Node.js, Java). It excels in enterprise environments demanding data privacy and high throughput.

IBM Food Trust is a consortium blockchain which is based on Hyperledger Fabric. It is designed for end-to-end food supply chain traceability and data sharing among established partners, but it retains Fabric's private nature, permissioned access, and essential features.

Platform Choices:

- **Decentralized App: Ethereum** is most suitable for DApps. Its open, public nature, extensive developer tools, and Ethereum Virtual Machine (EVM) is very DApp friendly.
- **Supply Chain Network among Known Partners: Hyperledger Fabric**. Its permissioned model, capacity for private channels, and high throughput ensure data confidentiality and scalability essential for enterprise consortia where participants are identified and trust is established.
- **Inter-bank Financial Application: Hyperledger Fabric**. Financial institutions require robust privacy, strong identity management, and high transaction volumes. Fabric's permissioned architecture and private data capabilities offer the necessary control and security for sensitive inter-bank operations.