HYPERLEDGER
FABRIC

Open, Proven, Enterprise-grade DLT

Hyperledger Fabric is an enterprise-grade, distributed ledger platform that offers modularity and versatility for a broad set of industry use cases. The modular architecture for Hyperledger Fabric accommodates the diversity of enterprise use cases through plug and play components, such as consensus, privacy and membership services.

Why Hyperledger Fabric?

One of the many compelling Fabric features is the enablement of a network of networks. Members of a network work together, but because businesses need some of their data to remain private, they often maintain separate relationships within their networks. For example, a purchaser may work with different sellers, selling the same product. The transactional relationship between the purchaser and each of the sellers should remain private and not visible across all sellers. This is made possible via the "channels" feature in Hyperledger Fabric if you need total transaction isolation, and the "private data" feature if you'd like to keep data private while sharing hashes as transaction evidence on the ledger (private data can be shared among "collection" members, or with a specific organization on a need-to-know basis.

Rather than an open, permission-less system, Fabric offers a scalable and secure platform that sup-ports private transactions and confidential contracts. This architecture allows for solutions developed with Fabric to be adapted for any industry, thus ushering in a new era trust, transparency, and accountability for businesses.

From the very beginning, Hyperledger Fabric was designed for enterprise use. It is intended as a foundation for developing applications or solutions with a modular architecture. Its modular and versatile design satisfies a broad range of industry use cases. It offers a unique approach to consensus that enables performance at scale while preserving privacy.

Unlike some other distributed ledger technologies that were originally designed for ad hoc, public use (where there is no privacy and no governance) which had to be significantly redesigned to add in support for permissions and privacy; Hyperledger Fabric was designed with these features as foundational. In this regard, Hyperledger Fabric has had a head start over many of the competing frame-works. For example, while there may be promise in some of the Ethereum 2.0 implementations, these are still mostly oriented to public network use, and in the Ethereum public network, the new architecture has still yet to be rolled out while Hyperledger Fabric has reached its version 2.0 milestone.

Below are some of the key features of Hyperledger Fabric and what differentiates it from other distributed ledger technologies.

- Permissioned architecture
- Highly modular
- Pluggable consensus
- Open smart contract model — flexibility to implement any desired solution model (account model, UTXO model, structured data, unstructured data, etc)
- Low latency of finality/confirmation
- Flexible approach to data privacy : data isolation using 'channels', or share private data on a need-to-know basis using private data 'collections'
- Multi-language smart contract support: Go, Java, Javascript
- Support for EVM and Solidity
- Designed for continuous operations, including rolling upgrades and asymmetric version sup-port
- Governance and versioning of smart contracts
- Flexible endorsement model for achieving consensus across required organizations
- Queryable data (key-based queries and JSON queries)

Behind every great open source technology, sits a strong community. The Hyperledger Fabric community has continuously improved the security, usability, robustness, performance and feature set — all qualities that are of critical importance to enterprise users.

To date, there are no other distributed ledger technology frameworks that enjoy the breadth of adoption by Cloud Service Providers such as AWS, Azure, IBM, Google, and Oracle.

The importance of open source and the community

The Hyperledger community is comprised of many world class technology providers and individual contributors, all collaborating to evolve blockchain technologies at record pace. Due to the diverse ecosystem, it supports the foundation for innovation, quality, and quick delivery that only open source can provide. Given that blockchain is such a foundational technology, one that is poised to transform and optimize the way the world transacts, it only makes sense for the technology to be open and for a variety of contributors to be involved. There are several key contributors to Hyperledger Fabric and you can find them listed here:
hyperledger.org/resources/vendor-directory

There have also been many contributions from countless members of the community via discussions in email and chat, as well as the many who have provided input to the project indirectly through published papers and feedback based on their experiences. The combination of industry, academic, and individual contributions is what drives continuous, rapid innovation of Hyperledger Fabric.

Production blockchain solutions built with Hyperledger Fabric

Blockchain technology has moved beyond the hype and there exist hundreds of networks in production today. Many of the production blockchain solutions in production today are built with Hyperledger Fabric. **For a list of tools and solutions built with Hyperledger Fabric, please visit here:**
hyperledger.org/resources/blockchain-showcase