



HYPERLEDGER

BLOCKCHAIN TECHNOLOGIES FOR BUSINESS

Hyperledger - Project Overview

January 2018

Introducing Hyperledger

Open source
collaborative effort to
advance cross-industry
blockchain
technologies

Hosted by
The Linux Foundation,
fastest-growing project in
LF history

Global collaboration
spanning finance,
banking, IoT, supply
chains, manufacturing
and technology

The Linux Foundation is Much More than Linux



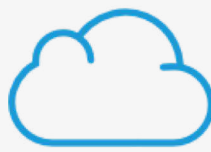
Security

We are helping global privacy and security through a program to encrypt the entire internet.



Networking

We are creating ecosystems around networking to improve agility in the evolving software-defined datacenter.



Cloud

We are creating a portability layer for the cloud, driving de facto standards and developing the orchestration layer for all clouds.



Automotive

We are creating the platform for infotainment in the auto industry that can be expanded into instrument clusters and telematics systems.



Blockchain

We are creating a permanent, secure distributed ledger that makes it easier to create cost-efficient, decentralized business networks.



Web

We are providing the application development framework for next generation web, mobile, serverless, and IoT applications.



We are regularly adding projects; for the most up-to-date listing of all projects visit [tlfprojects.org](https://www.linuxfoundation.org/projects)



Hyperledger Modular Umbrella Approach

Infrastructure

Technical, Legal,
Marketing, Organizational

Ecosystems that accelerate
open development and
commercial adoption



Cloud Foundry

Node.js

Hyperledger

Open Container
Initiative

Frameworks

Meaningfully differentiated approaches
to business blockchain frameworks
developed by a growing community of
communities

Hyperledger
Fabric

Hyperledger
Sawtooth

Hyperledger
Iroha

Hyperledger
Indy

Hyperledger
Burrow

Tools

Typically built for one framework, and through
common license and community of communities
approach, ported to other frameworks

Hyperledger
Composer

Hyperledger
Cello

Hyperledger
Explorer

Hyperledger
Quilt



Hyperledger Fabric

Business Blockchain Framework

- First project that was contributed to Hyperledger
- Contributed by Digital Asset and IBM
- Smart contracts called “chaincode” are written in Golang (and with 1.1 Javascript) and run in secure Docker containers
- Channels ensure that only the participants involved in a transaction see the transaction

Hyperledger Sawtooth

Business Blockchain Framework

- Hyperledger second project contributed by Intel
- Supports both permissioned and permissionless deployments
- Includes a novel consensus algorithm, Proof of Elapsed Time (PoET), which mimics proof of work without the high energy consumption
- Uses the secure enclave on an Intel chip to provide a random wait timer to each of the validators (nodes) on the network
- First validator whose timer expires generates the next block
- Supports the EVM through a collaboration with the Hyperledger Burrow community

Hyperledger Iroha

Business Blockchain Framework

- Contributed by Soramitsu, Hitachi, NTT Data and Colu
- Written in C++
- Emphasis on mobile application development
- Provides both Android and iOS SDKs

Hyperledger Indy

Business Blockchain Framework

- Contributed by the Sovrin Foundation
- Focuses on identities rooted on blockchains
- Utilizes zero-knowledge proofs to provide verifiable claims
- These verifiable claims can be used to prove something about the identity without providing access to the underlying data

Hyperledger Burrow

Business Blockchain Framework

- Contributed by Monax
- The first permissioned ledger with support for the Ethereum Virtual Machine (EVM)
- Originally named ErisDB
- Uses Tendermint as its consensus mechanism

Hyperledger Composer

Business Blockchain Tool

- Contributed by IBM and Oxchains
- Suite of tools to quickly develop your blockchain business networks
- Modeling language allows you to have your business people specify the participants, assets, and transactions
- Developers write transaction logic in JavaScript
- Ability to generate a REST API and Angular application from the model

Hyperledger Cello

Business Blockchain Tool

- Contributed by IBM, with sponsors from Soramitsu, Huawei and Intel
- Used for DevOps
- Allows you to quickly deploy your blockchain networks
- Provides the ability to monitor your blockchain networks
- Blockchain network can be deployed on baremetal, virtual machine, or cloud

Hyperledger Explorer

Business Blockchain Tool

- Originally contributed by IBM, Intel and DTCC. Recent release contributed by OneChain
- Allows you to visualize the blockchain
 - Blocks
 - Transactions
 - Network information
 - Chaincodes or Transaction families

Hyperledger Quilt

Business Blockchain Tool

- Contributed by NTT Data and Ripple
- Java implementation of the Interledger protocol
- Interledger protocol provides:
 - atomic swaps between ledgers (even non-blockchain or distributed ledgers)
 - a single account namespace for accounts within each ledger

WHO WILL YOU TRUST

WITH YOUR TRUST NETWORK?



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