Hyperledger

The Hyperledger Foundation is an open source collaborative effort created to advance cross-industry blockchain technologies. It is a global collaboration, hosted by The Linux Foundation, including leaders in finance, banking, IoT, supply chain, manufacturing and technology. To learn more, check out the About Hyperledger page. You can also find out more about Hyperledger’s projects, labs, Working Groups, Special Interest Groups and other community activities at the links below.

Getting Started

Everyone is welcome to get involved. Not sure where to start?

Watch the Getting Involved with Hyperledger videos

Visit the Frequently Asked Questions page.

Get a free Linux Foundation ID to access our tools.

/dev/weekly

Get the latest developer news in our weekly newsletter

Trending Community Activity

**Recent Issues**

- 79 Follow-up Events
- 77 Improve epochFinished predicate in ISS.
- 581 Using SipHash with private node key
- 3014 Support docker registry authentication when pulling chaincode builder images and chaincode runtime images
- 517 Is it possible to use LLVM Pass module in Solang?

See more >>>

**Recent Pull Requests**

- 2458 Fixing error message placement
- 616 Update dependencies
- 3221 Rollback rocksdb version
- 1217 Validate alternate ID formats
- 615 Make solidity parser a standalone crate

See more >>>

**Recent Releases**

- v0.4.0 v0.4.0
- v0.1.0 v0.1.0
- v0.6.2 Release v0.6.2
- v0.11.3 v0.11.3
- v0.9.3 v0.9.3

See more >>>

Graduated Projects

These Hyperledger projects have successfully exited the incubation phase (see the Project Lifecycle document for more details about Graduated Projects). All of these projects are open, so feel free to get involved with anything that looks interesting. You can also add all Project calls to your calendar to find out about upcoming meetings.
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<th><strong>Hyperledger Aries</strong> provides a shared, reusable, interoperable tool kit designed for initiatives and solutions focused on creating, transmitting and storing verifiable digital credentials. It is infrastructure for blockchain-rooted, peer-to-peer interactions. This project consumes the cryptographic support provided by Hyperledger Ursa, to provide secure secret management and decentralized key management functionality.</th>
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<td><strong>Hyperledger Besu</strong> is an Ethereum client designed to be enterprise-friendly for both public and private permissioned network use cases. It can also be ran on test networks such as Rinkeby, Ropsten, and Görli. Hyperledger Besu includes several consensus algorithms including PoW, and PoA (IBFT, IBFT 2.0, Etherhash, and Clique). Its comprehensive permissioning schemes are designed specifically for use in a consortium environment.</td>
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<td><strong>Hyperledger Fabric</strong> is intended as a foundation for developing applications or solutions with a modular architecture. Hyperledger Fabric allows components, such as consensus and membership services, to be plug-and-play. 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.</td>
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<td><strong>Hyperledger Indy</strong> provides tools, libraries, and reusable components for providing digital identities rooted on blockchains or other distributed ledgers so that they are interoperable across administrative domains, applications, and any other silo. Indy is interoperable with other blockchains or can be used standalone powering the decentralization of identity.</td>
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Hyperledger Iroha is designed to be simple and easy to incorporate into infrastructural or IoT projects requiring distributed ledger technology. Hyperledger Iroha features a simple construction, modular, domain-driven C++ design, emphasis on client application development and a new, crash fault tolerant consensus algorithm, called YAC.

Hyperledger Sawtooth offers a flexible and modular architecture separates the core system from the application domain, so smart contracts can specify the business rules for applications without needing to know the underlying design of the core system. Hyperledger Sawtooth supports a variety of consensus algorithms, including Practical Byzantine Fault Tolerance (PBFT) and Proof of Elapsed Time (PoET).

**Working Groups**

Working Groups are focused on building community around different challenges faced by the Hyperledger community. All of these groups are open, so feel free to get involved with anything that looks interesting. You can also add all Working Group calls to your calendar to find out about upcoming meetings. Learn more about Working Groups.

- Architecture Working Group
- Diversity, Civility, and Inclusion Working Group
- Identity Working Group
- Learning Materials Development Working Group
- Performance and Scale Working Group
- Technical Working Group China

**Special Interest Groups**

Special Interest Groups (SIGs) are industry specific groups of community members working together to help drive adoption of Hyperledger. All of these groups are open, so feel free to get involved with anything that looks interesting. You can also add all Special Interest Group calls to your calendar to find out about upcoming meetings. Learn more about Special Interest Groups.

- Capital Markets SIG
- Climate Action and Accounting SIG
- Healthcare SIG
- Media and Entertainment SIG
- Public Sector SIG
- Social Impact SIG
- Supply Chain SIG
- Telecom SIG
- Trade Finance SIG

**Incubation Projects**

These Hyperledger projects are in the incubation phase (see the Project Lifecycle document for more details about Incubation Projects). All of these projects are open, so feel free to get involved with anything that looks interesting. You can also add all Project calls to your calendar to find out about upcoming meetings.
Hyperledger Avalon is a ledger independent implementation of the Trusted Compute Specifications published by the Enterprise Ethereum Alliance. It aims to enable the secure movement of blockchain processing off the main chain to dedicated computing resources. Avalon is designed to help developers gain the benefits of computational trust and mitigate its drawbacks.

Hyperledger Bevel is an accelerator/tool that helps developers rapidly set up and deploy secure, scalable and production-ready DLT network(s) that also allows new organizations to be easily onboarded on the network. Bevel accelerates DLT network deployment and lets developers focus on building blockchain applications without having to waste precious time standing up the environment or worrying whether the network will scale and meet production requirements. Bevel facilitates a safe and secure way of deploying and operating different DLT platforms.

Hyperledger Burrow is a complete single-binary blockchain distribution focussed on simplicity, speed, and developer ergonomics. It supports both EVM and WASM based smart contracts and uses BFT consensus via the Tendermint algorithm. It has a sophisticated event system and can maintain a relational database mapping of on-chain data. Governance and permissioning is built in and can be amended by on-chain proposal transactions. It is optimised for public permissioned proof-of-stake use cases but can also be used for private/consortium networks.

Hyperledger Cactus is a blockchain integration tool designed to allow users to securely integrate different blockchains.

Hyperledger Caliper is a blockchain benchmark tool, it allows users to measure the performance of a blockchain implementation with a set of predefined use cases. Hyperledger Caliper will produce reports containing a number of performance indicators to serve as a reference when using the following blockchain solutions: Hyperledger Besu, Hyperledger Burrow, Ethereum, Hyperledger Fabric, FISCO BCOS, Hyperledger Iroha, and Hyperledger Sawtooth.

Hyperledger Cello aims to serve as the operational dashboard for Blockchain, which reduces the effort required for creating, managing and using blockchains. Besides, it can also be used to facilitate creating Blockchain as a Service. Cello provides an operational console for managing blockchain’s efficiently and running on top of various infrastructures, e.g., baremetal, virtual machine, and various container platforms.

Hyperledger Explorer is a user-friendly Web application tool used to view, invoke, deploy or query blocks, transactions and associated data, network information (name, status, list of nodes), chain codes and transaction families, as well as any other relevant information stored in the ledger.

Hyperledger Firefly is a multiparty system for enterprise data flows, powered by blockchain. It solves all of the layers of complexity that sit between the low level blockchain and high level business processes and user interfaces. FireFly enables developers to build blockchain apps for enterprise radically faster by allowing them to focus on business logic instead of infrastructure.

Hyperledger Grid intends to provide reference implementations of supply chain-centric data types, data models, and smart contract based business logic – all anchored on existing, open standards and industry best practices. It showcases in authentic and practical ways how to combine components from the Hyperledger stack into a single, effective business solution.

Hyperledger Transact aims to reduce the development effort in writing distributed ledger software by providing a standard interface for executing smart contracts that is separate from the distributed ledger implementation. Hyperledger Transact takes an extensible approach to implementing new smart contract languages called "smart contract engines," that implement a virtual machine or interpreter that processes smart contract
Hyperledger Ursa is a shared cryptographic library, it enables implementations to avoid duplicating other cryptographic work and hopefully increase security in the process. The library is an opt-in repository (for Hyperledger and non Hyperledger projects) to place and use crypto. Hyperledger Ursa consists of sub-projects, which are cohesive implementations of cryptographic code or interfaces to cryptographic code.

Note: Hyperledger Quilt has been moved to Dormant status and Hyperledger Composer has been moved to End of Life but the code for the projects is still available.

Additional development efforts can be found in Hyperledger Labs.