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.

Learn how to use Hyperledger Besu to participate in public Ethereum networks

Trending Community Activity

Recent Issues

755 Comparisons should support constants
754 Overflow checking in constant arithmetic
2056 Create a iroha procedural macro for impl FromStr for AssetValue1Type and other C like enums
2053 Unit test the private_blockchain permissions validators
2047 Add non_zero numeric types where acceptable

See more >>>

Recent Pull Requests

1782 Changed "transactions.md" to correct typos.
1023 WIP: Create switch instruction
133 Bump commonmarker from 0.23.4 to 0.23.6 in /docs
1068 make contract listener location optional
100 Support specifying a non-default contract address for a pool

See more >>>

Recent Releases

v2.2.6 v2.2.6
v2.2.17 v2.2.17
rest-v0.9.3 @aries-framework/rest rest-v0.9.3
v1.1.0 v1.1.0
0.42.0 Release 0.42.0

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.
<table>
<thead>
<tr>
<th>Hyperledger Aries 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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<tr>
<td>Hyperledger Besu 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>Hyperledger Fabric 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>Hyperledger Indy 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).

### 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.

- Climate Action and Accounting SIG
- Financial Markets SIG
- Governance, Risk, and Compliance SIG
- Healthcare SIG
- Media and Entertainment SIG
- Public Sector SIG
- Supply Chain and Trade Finance SIG
- Telecom SIG

### Regional Communities

Hyperledger is a global community and people contribute from all over the world. In some places community members have organized regional activities for those who share a common geography and/or language. Check out the information below to see how to connect with an existing regional community or learn how to create a new regional chapter.

- Hyperledger Africa Chapter
- Hyperledger Brazil Chapter
- Technical Working Group China
- Hyperledger India Chapter

- Hyperledger Italian Chapter
- Hyperledger Japan Chapter
- Hyperledger Latinoamerica Chapter

### 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.

- Identity Working Group
- Learning Materials Development Working Group

- Performance and Scale Working Group
### 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.

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<tr>
<th>Hyperledger Bevel</th>
<th>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.</th>
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<td>Hyperledger Cactus</td>
<td>Hyperledger Cactus is a blockchain integration tool designed to allow users to securely integrate different blockchains.</td>
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<td>Hyperledger Caliper</td>
<td>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.</td>
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<td>Hyperledger Cello</td>
<td>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.</td>
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<td>Hyperledger Firefly</td>
<td>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.</td>
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<td>Hyperledger Grid</td>
<td>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.</td>
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<td>Hyperledger Transact</td>
<td>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</td>
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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 Avalon, Hyperledger Burrow, Hyperledger Composer, Hyperledger Explorer and Hyperledger Quilt have been moved to End of Life but the code for the projects is still available.

Hyperledger Labs

Hyperledger Labs provides a space (i.e., GitHub repos) where work can easily be started without the creation of a project. Labs are a good place to experiment and to start to build a community around an idea. Several Hyperledger projects initially started out as a lab. Anyone is welcome to start a new lab and you're also welcome to get involved in any of the existing labs. The following labs have also set up regular community calls where you can dial-in to learn more, ask questions and collaborate with others.

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<tr>
<th>MirBFT Library</th>
<th>MirBFT is a consensus library implementing the Mir consensus protocol</th>
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<td>Orion</td>
<td>Orion is a key-value/document database with certain blockchain properties such</td>
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<tr>
<td>Solang</td>
<td>Solang is a Solidity Compiler for Solana, Substrate, and ewasm</td>
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