# Hyperledger Caliper

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<tr>
<th>Project</th>
<th><img src="image" alt="Hyperledger Caliper Logo" /></th>
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<tr>
<th>Status</th>
<th>INCUBATION</th>
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| Description | Blockchain benchmark framework which allows users to measure the performance of a specific blockchain implementation with a set of predefined use cases. |

Caliper is a blockchain benchmark framework which allows users to measure the performance of a specific blockchain implementation with a set of predefined use cases. Caliper will produce reports containing a number of performance indicators, such as TPS (Transactions Per Second), transaction latency, resource utilisation etc. The intent is for Caliper results to be used as a reference in supporting the choice of a blockchain implementation suitable for the user-specific use-cases. Given the variety of blockchain configurations, network setup, as well as the specific use-cases in mind, it is not intended to be an authoritative performance assessment, nor to be used for simple comparative purposes (e.g. blockchain A does 5 TPS and blockchain B does 10 TPS, therefore B is better). The Caliper project references the definitions, metrics, and terminology as defined by the Performance & Scalability Working Group (PSWG).

## Key Characteristics

- A unified blockchain benchmark framework. We provide a common layer to integrate with major existing blockchain framework/platforms, so that the same benchmarks can be run for different blockchain systems. Some benchmark test environment will be provided to help different people run tests under the same environment, blockchain management tools like Hyperledger Cello could be integrated later to deploy and operate the environment. Also, users can use their existing environment and configure Caliper to run the test under the environment.
- A commonly accepted definition of performance indicators. You cannot compare an apple and a pear directly unless some common criteria are set. We will work closely with PSWG to provide a common definition of performance indicators that users care about, such as TPS, latency, resource utilization, etc.
- A set of commonly accepted benchmark cases. The goal of Caliper includes providing a set of easy-understandable benchmark cases so that each blockchain solution can be compared in various scenarios. This calls for much collaboration from PSWG, Requirement WG and other WG in Hyperledger community as well as blockchain practitioners to cover as many use cases that are of user’s interest as possible.

## Project Management

**Issue Tracking** - [https://github.com/hyperledger/caliper/issues](https://github.com/hyperledger/caliper/issues)

## Repositories

- **Source code**: [https://github.com/hyperledger/caliper](https://github.com/hyperledger/caliper)
- **Documentation**: [https://hyperledger.github.io/caliper/](https://hyperledger.github.io/caliper/)

## Additional Materials

- Project health charts
- *2019 Hong Kong Bootcamp Tutorial* (outdated, pre-publish version)

## License Scan Results
Security Audit
When Hyperledger Caliper reaches their first major release, Hyperledger will execute an external security audit of the code.

License Audit
2019-03 Caliper License Audit Summary
2019-03 Caliper License Audit Full Report

License Audit Fixes
Hyperledger Caliper License Github Issues

Crypto Audit
Hyperledger Export Notice

Communication
Mailing List
- caliper
- Mail alias: caliper@lists.hyperledger.org
- Mail archive: https://lists.hyperledger.org/g/caliper/topics
- Mail subscription: https://lists.hyperledger.org/g/caliper

Chat (for questions and ephemeral discussions)
Questions are welcome and best asked in Hyperledger Discord. Learn more about Hyperledger Discord here, get the invite and check out one of the many Caliper project channels.

Meeting
There is a community call every four weeks on Zoom, at UTC time 3PM on Wednesday. The exact meeting details can be found in Hyperledger meeting calendar.

Minutes
- October 17, 2018 minutes
- October 24, 2018 minutes
- October 30, 2018 minutes
- November 6, 2018 minutes
- November 14, 2018 minutes
- November 21, 2018 minutes
- November 27, 2018 minutes
- December 4, 2018 minutes
- December 19, 2018 minutes
- January 16, 2019 minutes
- March 27, 2019 minutes
- April 3, 2019 minutes
- May 22, 2019 minutes

History
- Proposed by Haojun ZHOU and Victor HU, Huawei
- Approved by the TSC on 2018-03-15

Recent space activity
- Dave Kelsey
- Sean Bohan

Space contributors
- Dave Kelsey (20 days ago)
- Sean Bohan (96 days ago)
- Attila Klenik (679 days ago)
- David Huseby (1237 days ago)
- qinghui hou (1263 days ago)
- ...