Performance and Scale Working Group

Description	Performance and scalability are two key characteristics of any platform. In terms of most of the Hyperledger projects, both will directly relate to end user satisfaction and ultimately adoption of a project. For instance, if a code base consumes too many system resources or does not complete an action in a reasonable time with respect to other solutions, it may not succeed. Similarly, if a product does not scale well (horizontally and or vertically), it may not succeed. The purpose of the Performance and Scalability Working Group (PSWG) is to discuss, research, and identify key metrics that relate to the performance and scalability of a blockchain and blockchain related technologies.

Charter

Please see Charter for the full text of the charter.

Scope

PSWG serves as a cross project forum for architects and technologists from the Distributed Ledger Technology (DLT) community to exchange ideas and explore the performance and scalability aspects of the DLT projects. PSWG will help review incoming performance project proposals and make recommendations to the TSC. The PSWG may work with the other working groups, especially in the areas of architecture and requirements.

Links to Completed Work

- Metrics White Paper

Links to Ongoing Work

- DRAFT Metrics Definition Proposal
- DRAFT Performance Considerations in a DLT/Blockchain World
- DRAFT Fault load
- Metrics White Paper Chinese Translations

Links to External Resources

- Hyperledger Caliper Proposal
- BLOCKBENCH: A Framework for Analyzing Private Blockchains
- BLOCKBENCH source repository
- Bitcoin-NG: A Scalable Blockchain Protocol - A Usenix Paper
- Hyperledger Fabric: A Distributed Operating System for Permissioned Blockchains Includes some preliminary performance test results for fabric v1.0 with the Bitcoin-like (UTXO-based) “fabcoin” smart contract
- Performance Characterization of Hyperledger Fabric Appears in the First Crypto Valley Conference on Blockchain Technology (CVCBT 2018)
- Performance Evaluation of the Quorum Blockchain Platform
- Gauge - Performance Benchmarking Tool for Hyperledger Fabric and Quorum based on original version of Huawei Caliper with some new features, plugin for the Quorum blockchain platform, and support for micro-benchmarks and scaling experiments.
- Performance Modeling of Hyperledger Fabric - Developed analytical models to estimate various performance measures (throughput, latency, mean queue length) = f(system, application configuration). Published at IEEE NCA conference, Nov. 2018
- Performance Modeling and Analysis of Hyperledger Fabric - Modeled and analyzed Fabric v0.6 and V1 from performance perspective. Ph.D. Thesis. (in press)
- Accelerator - Designed to improve the performance of a blockchain network, e.g. Hyperledger Fabric, in terms of transaction throughput.
- Fabric Machine: Accelerating Hyperledger Fabric Using FPGAs

Active Members

Name	Company
Mark Wagner, WG Chair	Red Hat

Communication Channels

These are the mechanisms that this working group uses to communicate. You are invited to join the conversation.

Mailing List

perf-and-scale-wg@lists.hyperledger.org

- Subscribe
- Archives

Chat Channel

#performance-and-scale-wg

Meetings

The Performance and Scale Working Group meets weekly on Tuesdays at 9:00 AM US/Eastern time. See the Calendar of Public Meetings for the next meeting and dial in details.

TSC Working Group Updates

- September 2018
- June 2018
- April 2018

New TSC Working Group Update

Todd Little	Oracle
Mark Simpson	Chorum
Harish Sukhwani	Duke University (graduated)
Vipin Bharathan	dlt.nyc: vip@dlt.nyc Vipin Bharathan

Recent space activity

Haris Javaid

PSWG June 15, 2021 created Jun 09, 2021

PSWG May 18, 2021 updated May 18, 2021 • view change

2017-2018 Meetings updated May 07, 2021 • view change

Meetings updated May 07, 2021 • view change

David Boswell

PSWG May 18, 2021 updated May 04, 2021 • view change

Space contributors

- Haris Javaid (5 days ago)
- David Boswell (41 days ago)
- Yang Cheng (116 days ago)
- David Liu (340 days ago)
- Mark Wagner (817 days ago)
- ...