

# Integration of EVM (from Hyperledger Burrow) to Hyperledger Iroha August, 2019



# Integration of Burrow EVM to Iroha

## › Introduction

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- › **Hyperledger project:** Hyperledger Iroha and Hyperledger Burrow

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## › Project Description:

- **Hyperledger Iroha** — straightforward and simple DLT.
  - Asset management via special commands.
  - Technologies: C++, Protobuf, GTest, Boost
- **Hyperledger Burrow** — a modular blockchain client.
  - A smart contract interpreter based on the Ethereum Virtual Machine (EVM).
  - Technologies: Go, Protobuf.

Ethereum de-facto is the most popular smart contract platform. The task is to integrate EVM from Hyperledger Burrow to Hyperledger Iroha.

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## › Project Objectives:

- › Obj 1: Add new Iroha command to work with EVM bytecode.
- › Obj 2: Develop a wrapper to bind Iroha and Burrow EVM runtimes.
- › Obj 3: Implement Burrow EVM API to use Iroha blockchain state.
- › Obj 4: Perform testing.

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## › Project Deliverables:

- › Deliverable 1: Updated Iroha code with new command.
- › Deliverable 2: A wrapper to connect Iroha and Burrow.
- › Deliverable 3: Tests.
- › Deliverable 4: A user guide how to use smart contracts in Iroha.

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## › Project Execution & Accomplishments:

Done:

- New command is integrated.
- Burrow EVM can read/write data from Iroha.
- Most of the tests are written.

Should be done (keep working on them with Iroha team):

- Run ERC-20 token smart contract as a test.
- User guide.
- Pull-request to Iroha repository.

Challenges:

- Understanding codebases.

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## › Recommendations for future work:

Features and improvements:

- Implement web3 Ethereum interface
- Add permissions for Iroha/EVM accounts
- Catch EVM logs and events

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