Iroha Project Presentation

August 2021

HL Burrow and HL Iroha extend existing Solidity VM integration

› **Introduction**

- **Name**: Ayush Jalan

- **Location:** Gorakhpur, India

- **University:** Indian Institute of Technology Roorkee, India

- **Mentor:** Grzegorz Bazior

- **Hyperledger Project**: Hyperledger Iroha and Hyperledger Burrow

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› **Project Description**:

  - Hyperledger Iroha - a permissioned blockchain
  - Hyperledger Burrow - permissioned Ethereum smart-contract blockchain node
  - The aim of the project is to extend the HL Burrow and HL Iroha integration, which will create an environment for smart contracts using the Ethereum Virtual Machine

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HYPERLEDGER BURROW

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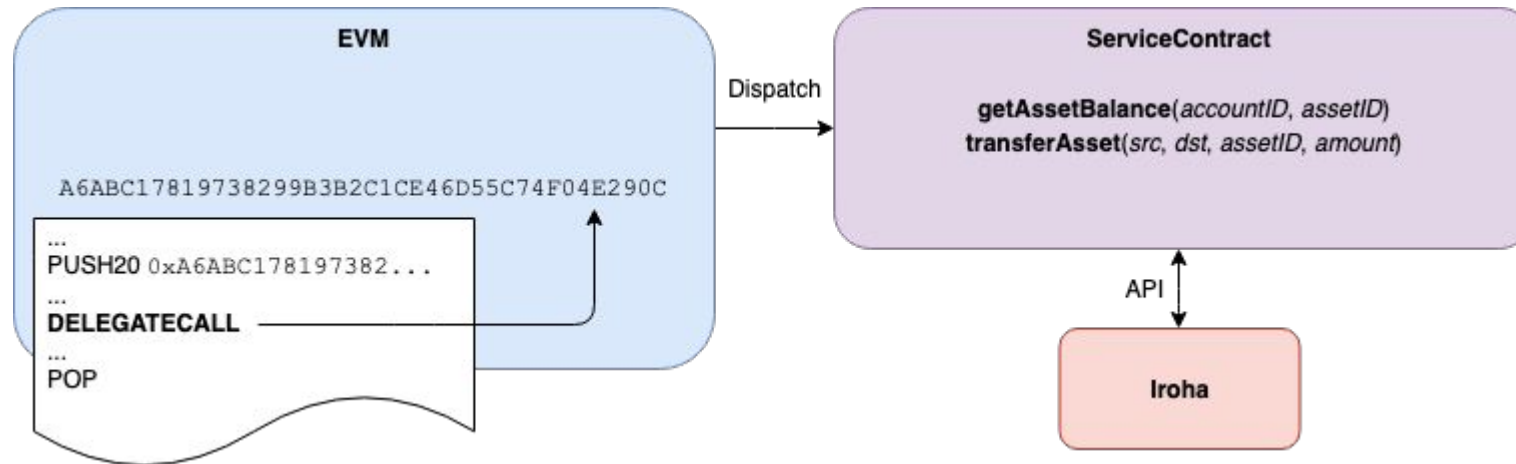
› **Project Objectives**:

  ○ To learn architecture of HL Iroha

  ○ To integrate all Iroha commands and queries in Burrow integration

  ○ To implement Burrow EVM APIs to use Iroha Blockchain state

› **Project Deliverables:**

  ○ Update Iroha-Burrow integration code

  ○ Sample smart contracts(in Solidity) and python scripts

  ○ Documentation of the project

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› **Working:**

Source: https://iroha.readthedocs.io/en/main/_images/natives.svg

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› **Demo:**

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› **Project Execution & Accomplishments**:

- All of the project objectives and deliverables were accomplished.
- Working with the best developers was a really great experience.
- Understanding the codebases was most challenging. But thankfully, my mentor helped me a lot in this.

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› **Project Output or Results**:

- Project Link: https://wiki.hyperledger.org/display/INTERN/HL+Burrow+and+HL+Iroha+extend+existing+Solidity+VM+integration
- Github Link: https://github.com/Ayush-Jalan/iroha
- A Pull Request has also been merged with https://github.com/hyperledger/iroha/tree/support/1.2.x and the integration will aslo be available in next Iroha 1.3.0 release
- Complete documentation of the project can be found at https://iroha.readthedocs.io/en/main/integrations/burrow.html

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› **Recommendations for future work:**

- Few commands have not been integrated, so it could be worked upon
  - ➢ GrantPermission, RevokePermission, CreateRole, CompareAndSetDetail
  - ➢ GetTransactions, GetPendingTransactions, GetAccountTransactions, GetAccountAssetTransactions
- Currently, there are two in-built tests for Engine Call and Engine Receipts, more in-built tests can be made for the integration.
- This integration will help Iroha team's vision to build a visual programming language over the integrated virtual machine.
- Integration of multi-signature transactions

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› **Insights Gained:**

- ○ Working together in an open-source community
- ○ Writing code with better readability
- ○ Not to be hesitant in trying new things
- ○ Have more belief in myself to accomplish things

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› **Acknowledgement** :

- Grzegorz Bazior
- Sara Garifullina
- All the members of the Iroha Team
- Hyperledger community
- My family and friends

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THANK YOU!

Questions?