

Hyperledger Mentorship Project Presentation



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FOUNDATION
Mentorship Program

Extend existing Iroha - Cacti integration

› Introduction

- › **Name:** Yashraj Desai
- › **Location:** Mumbai, India
- › **Mentor(s):** Peter Somogyvari, Grzegorz Bazior
- › **Hyperledger Project:** Extend Hyperledger Iroha + Cacti - Integration v2

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› Cacti

- › Cacti is a blockchain decentralized integration tool that allows users to securely integrate different blockchains.
- › Pluggable architecture (Eg. Fabric, Besu, Iroha)
- › Cacti can transfer both assets and data between multiple blockchains.

› Iroha

- › Iroha (version 1.x) is great with asset management, and has functionality to store data.
- › Cacti and Iroha a perfect fit!

› Technologies used

- › Typescript, Node.js, Express, Docker, OpenAPI.

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› Project Objectives:

- › Obj 1: Implement missing features + tests + documentation
- › Obj 2: Update Iroha version to newest in the integration.
- › Obj 3: Make the cacti-iroha connector plugin configurable and dynamic.
- › Obj 4: Create tutorial demonstrating how to set up connection between multiple networks

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› Project Execution & Accomplishments:

- › Added dynamic request parameters in Cacti-iroha plugin. (Obj 1 + Obj 3)
- › Updated the iroha-javascript client library with the latest Iroha (1.5.0) proto files. (Obj 2)
- › Updated the iroha-Cacti plugin with the latest Iroha-javascript (1.5.0) library. (Obj 2)
- › Added an example for implementing smart contracts and tested it in Iroha-javascript library. (Obj 1)
- › Successfully tested TLS encryption in Iroha-javascript library. (Obj 1)

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› Recommendations for future work:

1. Test TLS encryption in Iroha-Cacti plugin.
2. Test smart contracts by using Call Engine command for Iroha-Cacti connector.
3. Tutorial demonstrating how to set up connection between multiple networks
4. For a more detailed list, see:
<https://wiki.hyperledger.org/display/INTERN/Project+Plan+-+Extend+existing+Iroha+-+Cacti+integration>

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› Project Output or Results:

- › Add smart-contract example: [Iroha-Javascript PR #110 \(Merged\)](#)
- › Add dynamic request params: [Cacti PR #2148 \(Merged\)](#)
- › Update Iroha-javascript with latest Iroha (1.5.0) proto files: [Iroha-javascript PR #125 \(Merged\)](#)
- › Updated the iroha-Cacti plugin with the latest Iroha-javascript (1.5.0) library: [Cacti PR #2166 \(Merged\)](#)
- › Add TLS encryption: [Cacti PR #2202 \(Draft\)](#)

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› Insights Gained:

- › Understood Iroha-Cacti interoperability.
- › Plugin based architecture
- › TLS protocol
- › Learnt how multiple organisations collaboratively build large projects.



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› Acknowledgement:

- › Special thanks to my mentors (Peter and Greg) as well as Iroha and Cacti communities.
- › Also thanks to LFX for hosting and sponsoring this mentorship.





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A photograph of a large audience seated in a lecture hall, overlaid with a semi-transparent blue filter. On the left side, there are white geometric lines forming a network-like structure with a central blue circle.

THANK YOU!