Hyperledger Mentorship Project Presentation

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Support Clique Consensus for Besu on HL Labs
Blockchain Automation Framework

› Introduction
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  › Mentor(s): Sownak Roy - UK
  › Hyperledger Project: Blockchain Automation Framework
Support Clique Consensus for Besu on HL Labs
Blockchain Automation Framework

Project Description:

Blockchain Automation Framework (BAF) – A tool to deploy different DLT platforms automatically on a given Kubernetes cluster. BAF supports multi cloud and multi-DLT deployments and already supports HL Fabric, HL Besu, Quorum, R3 Corda. For HL Besu only IBFT2 Consensus was supported by BAF.

The aim of the project was to add a support for the Clique consensus for Hyperledger Besu, so that BAF can be used to deploy and operate a HL Besu network with Clique consensus. This also include upgrading BAF to support the latest stable Besu version.

Tools/Technologies used: Ansible, Helmcharts, Molecule and Kubernetes, GitOps
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Project Objectives:

- To understand the Architecture of Besu and BAF
- To write Ansible scripts to automate the deployment of Besu with Clique
- Testing the scripts, and successfully deploy the Besu network using Clique on Kubernetes cluster
- To learn production grade architecture
- To understand DevOps in Blockchain Development
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Project Deliverables:

- Ansible scripts to automate the generation of Helm value files
- Testing the Besu network getting successfully deployed using clique consensus
- Documentation on how to use BAF for deploying HL Besu with Clique consensus
- Documented, upgrade of Besu to latest stable on BAF
- Present the work to the community
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› Project Execution & Accomplishments:

- I was able to add the support for Besu Clique consensus and Document changes
- All the project objectives and deliverables were accomplished
- Working with the best developers was really a great experience
- Most challenging part was to understand requirements for clique support, and also to make the Local setup of all tools, Docker, Git, GKE environment, Ansible, Hashicorp Vault
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Recommendations for future work:

- Add new node on Ethash and Clique network
- Testing ethash consensus
- Test the supply chain application on Ethash and Clique network
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Project Output or Results:

- Merged Pull Request:
  - Issue 510: [besu] added clique consensus
  - Issue 1295: [besu] added GCP- storageclass
  - Issue 510: [besu] updated the documents and added doc changes for clique

- Project plan Link: [project plan with deliverables, reports, accomplishments]

- GitHub Repo: [BAF GitHub Repository]

- Documentation: [BAF Doc], [Clique Doc]
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Insights Gained:

- Understanding the large codebase
- Writing production grade code with better readability documentation
- Working together in an open-source community and spread open source culture

Advice:

- Make plan before coding, ask queries and clear doubts with mentors
- Trying new things, approaches, ways to complete task
- Take your time to know, learn and understand the things
THANK YOU!