24-May-2016

**HIP Identifier:** Proposal to incubate Java chaincode support in the Hyperledger Fabric project

**Sponsor(s):**

Murali Krishna, DTCC ([mkrishna@dtcc.com](mailto:mkrishna@dtcc.com))

Pardha S Vishnumolakala, DTCC (pvishnumolakala@dtcc.com)

Sheehan Anderson, IBM ([sheehan@us.ibm.com](mailto:sheehan@us.ibm.com))

Muralidharan Srinivasan (muralisr@us.ibm.com)

**Abstract:** Accept Java chaincode support into incubation status within the Fabric repository. The code will initially be submitted into a “java-chaincode” branch where we will collaborate with others to improve the project. Formally evaluate Java chaincode support (with ongoing improvements) and eventually merge the code into the master branch of the Fabric repository.

**Motivation:** Within the Fabric project, chaincode is similar to a smart contract in that it allows users to add custom logic to the validation of transactions in the blockchain. The Fabric project currently supports chaincode written in the Go language. Go is a relatively new language and while it is quickly growing in popularity, it has yet to enter the mainstream in most enterprise organizations. Many organizations are already comfortable with the Java language and its tooling, have existing code bases written and Java, and have a large number of developers who are familiar with the language. Therefore, it would be useful to be able to write chaincodes in the Java language.

**Proposed Status:** Incubation

**Solution:**

Project tasks include the following.

* Create a “java-chaincode” branch in the Fabric repository
* Commit initial Java chaincode shim code from IBM
* Update Java chaincode shim code to support the most recent chaincode API
* Add documentation for Java chaincode
* Add behave tests for Java chaincode
* Add sample Java chaincode
* Optionally add support for features found in Go chaincode such as table support
* Test performance of Java chaincode
* Merge “java-chaincode” branch into the “master” branch of Fabric

**Effort and resources:** Completion of this project is expected to take about one month. Initial tasks, such as the ability to simply run a Java chaincode, will be supported very soon after this project is started. DTCC and IBM will both contribute developers to this project, with DTCC leading the effort due to their Java expertise. Other members of the Hyperledger community are welcome and encouraged to contribute.

**How to:** Create a branch within the Fabric repository named “java-chaincode”. This branch will contain the initial “java-chaincode” code and will be used for on-going development.

**Closure:** Workwill continue until all tasks have been completed and Java chaincode is a first class citizen in the Fabric project. At this point, the “java-chaincode” branch will be merged into the “master” branch of the chaincode repository.