Mojaloop and interledger

PI 22 Report: 28 June 2023

Progress this PI

A (very) brief sketch of ILP

- ILP originated as a low-level protocol which enabled:
  - Address-based payments: you only need to know where you want to get to, not how to get there.
  - Streaming payments: payments which can be broken down into smaller pieces which can be executed independently.
- Rafiki is a higher-level interface which encapsulates ILP at the application layer
  - Entities can interact via high-level calls…
  - … without needing to accommodate the routing and streaming aspects of ILP

Where did we start?

- For PI-21 in Kigali, we demonstrated a proof of concept which showed:
  - Using Rafiki to initiate a payment to an MSISDN
  - Building a cross-network provider (CNP) which spoke Rafiki on one side and FSPIOP on the other.
  - Collecting the outbound request at the CNP Rafiki
    - Converting it into an FSPIOP request for address resolution.
    - Converting it into an FPSIOP request for agreement of terms.
    - Responding to the initiating Rafiki instance
  - Requesting the execution of the payment at the outbound Rafiki
    - Converting this into an FSPIOP request for payment
    - Executing the request for payment
    - Reporting back on the success of the payment directly to the sending Rafiki entity

What did we not do?

- Demonstrate how to clear funds from a user in a Mojaloop scheme to an institution running Rafiki.
- Anything relating to settlement

Next steps:

- We have agreed with ILF that we will:
  - Develop a proof of concept that will demonstrate how funds can be transferred from a customer of a participant in a Mojaloop system to a customer of a Rafiki system which is not part of a Mojaloop scheme
  - This excludes questions of how funds could be settled
- Deploy both this solution and the PoC developed with PCH for the Kigali convening into the ILF sandbox

Progress this month

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  - Develop a proof of concept that will demonstrate how funds can be transferred from a customer of a participant in a Mojaloop system to a customer of a Rafiki system which is not part of a Mojaloop scheme
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  - Deploy both this solution and the PoC developed with PCH for the Kigali convening into the ILF sandbox
- In the mean time, we have started a conversation about how the two protocols should interact with each other in an ideal world
  - Initial workshop has been held
  - The core problems have been identified:
    - Support for multi-part transfers
    - Deterministic allocation of routes and costs
  - Actions agreed
  - Further workshops will be scheduled as material is developed

What’s next?

Pain points from the PoC

- The CNP is acting as a concentrator for a number of different entities (the participants in the Mojaloop scheme)
  - Rafiki expects fees to be charged at the level of the Rafiki instance, whereas Mojaloop needs to be able to support different fees per participant.
- ILP may break a payment up into a number of sub-payments which will be executed separately
  - … and which may follow different routes.
  - Mojaloop currently wants to deal with a single payment. It has no concept of part payments.
- As a consequence, Mojaloop needed to wait until Rafiki thought the payment was complete before Mojaloop processed the payment
  - … but that meant that the Rafiki instances had already agreed that the payment was complete.

Actions this PI

- We have had a first workshop to discuss how Rafiki and Mojaloop might be able better to harmonise with each other.
- This resulted in a series of annotated flows…
- … and an action plan

Action plan

- Mojaloop to review the possibility of accommodating multiple transfers per payment
- ILF to consider amending the status of payments to include a FINALISED state
- Proposed demo of how this would work
- ILF to add sending participant to the InterLedger packet.
- Reconvene end of July.

Questions?