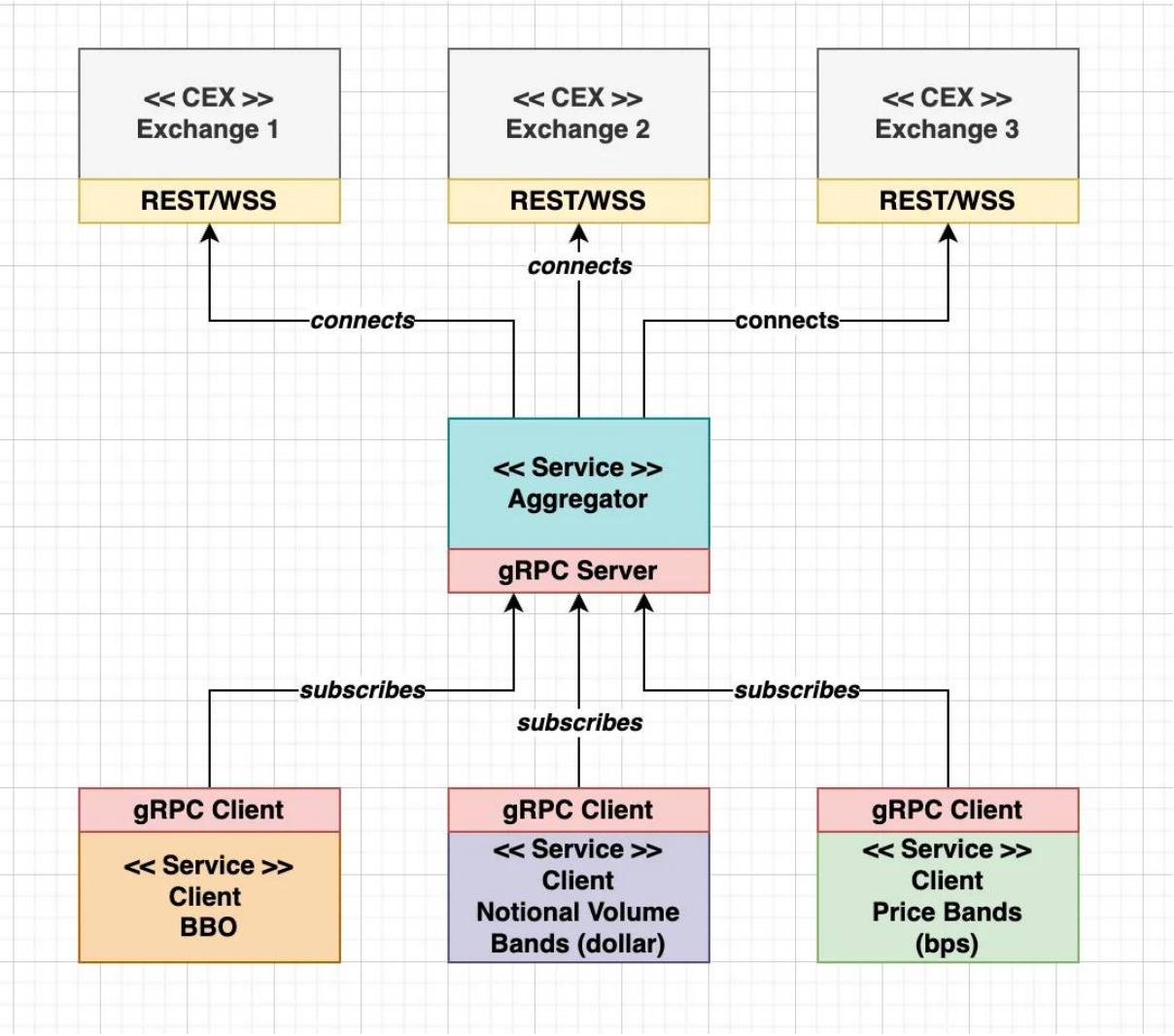
Dear Senior C++ Engineer Candidate,

We would like to request you to work on the below test assignment at your convenience.

The expected timeframe is 2 weeks maximum from the time the assignment e-mail is received. You can spend the whole 2 weeks, but please take note that there might be other candidates working on the same assignment and we'll be evaluating candidates on a first come-first served basis.

Assignment



You are to implement the set of following services (see diagram above)

- Aggregator - service that connects to 3 CEX of choice and subscribes to BTCUSDT pair market data feeds (either spot or perpetual futures).
    - Service is expected to aggregate the data from 3 exchanges into one single consolidated book
    - Service is expected to expose the gRPC server endpoint(s) that can be subscribed by the client applications (other services) in order to receive timely updates about changes in consolidated aggregator books
- Client Service in multiple variations, that subscribe to the aggregator as gRPC clients, receive updates and publish them into stdout. Variations are:
    - Publisher for Best Bid-Offer
    - Publisher for Volume Bands Prices for 1M/5M/10M/25M/50M+ notional values bands
    - Publisher for Price Bands for BBO+ 50bps/100bps/200bps/500bps/1000bps+

Expected deliverables (full implementation must be in C++)

- Codebase in Github that we can download
- Docker container files for every service
- Docker compose (or similar) file to be able to run everything on a single host
- README explaining how to build, how to run, technical decisions made, and any other relevant documentation

Assessment Criteria

- Correctness of implementation
- Quality of architectural design
- API/protocol design and extensibility
- System scalability

- Code quality and test coverage

Questions can be asked during the assignment if clarification is needed. We wish you good luck and we hope to hear from you soon.

Regards,