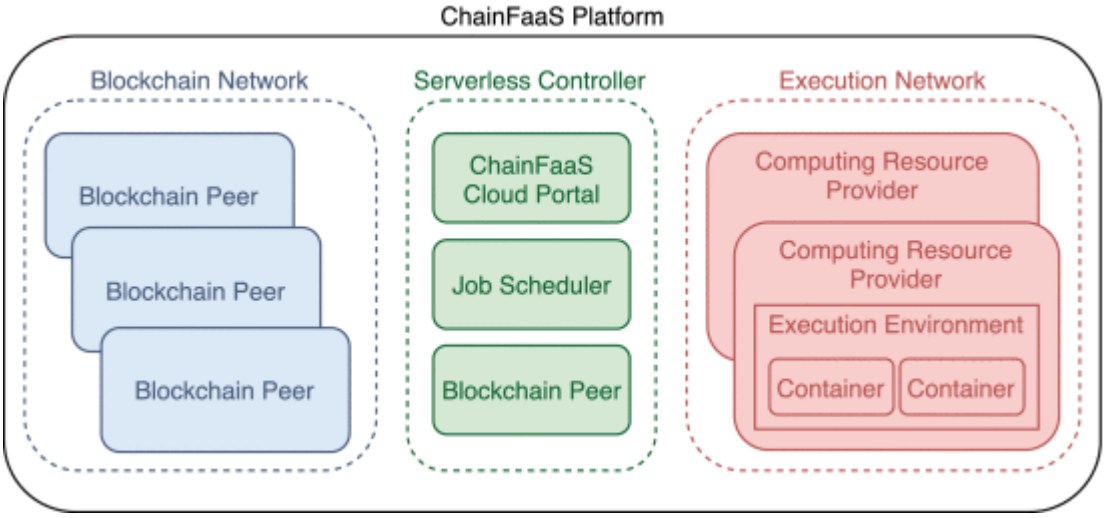
ChainFaaS paper review

ChainFaaS seeks to use commercially sold consumer-grade computers, which remain idle and unused most of the time, to serve enterprise compute needs.

Interesting points

- Average CPU utilisation is only 24.5%
- "Open and transparent" due to the inherent nature of blockchains
- Cheaper, or aims to be
- Edge compute since the node closest to you could compute it. Reduces ping



- A large part of the paper's fundamental premise is based off a single survey of about a 1000 computers.
- The paper also assumes that it would be more environment-friendly to run jobs on end-user devices, whereas there could be a few reasons why that wouldn't be the case:
    - Server farms use hardware optimised for certain tasks, e.g. specialised GPUs for training LLMs. Training the same LLMs on consumer GPUs would be less efficient and would ultimately use more power.
    - Since server farms are closely linked, sharing data amongst parts of it are easy. Running small jobs on several computers across the world could create numerous network hops, increasing network traffic for every computer in the way.

Pitfalls

- A "permissioned" or controlled blockchain is required, and identities cannot be kept anonymous
- The developer must trust the output of the one running the distributed function - and while they can *verify* themselves, that defeats the purpose because the whole point was to delegate the compute to someone else
- Protection of private data: Most user data is copyright protected, and making it publicly available to run compute jobs on isn't possible. *Example: Photos you upload to Google Photos, where the compute job is face tagging.*
- Consumer hardware is not meant for constant power use. Lack of adequate cooling and regular maintainance would wear out consumer hardware very quickly. Server farms consider it routine procedure to swap dead SSDs every day: consumers don't.