

Peer-to-Peer Content Delivery Network

Students



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Introduction: Web applications have historically been centralized in their way of distributing data. Peer-to-peer protocols such as BitTorrent have only recently been introduced to the web thanks to the increasing support of WebRTC. This project analyses technologies that already take advantage of this while proposing improvements to increase decentralization.

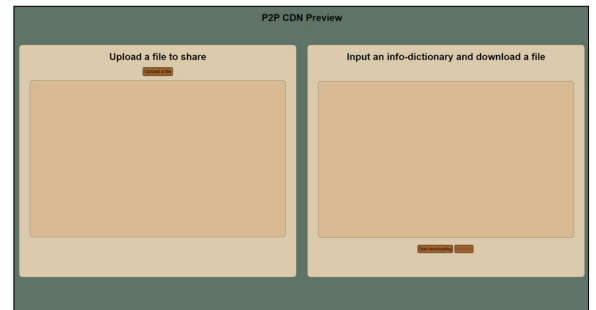
Approach / Technology: After researching available technologies and proposing a new concept, we built our proposed concept as a prototype. The focus of this prototype is to be as decentralized as possible, while still working with a web application without the need to install any plugins or external software by a user.

Result: Our concept, backed by the prototype, shows that it is possible to implement a system for delivering files in a peer-to-peer fashion without centralized services. Arguably, the developed prototype is not suitable for small, latency sensitive data, because of the latency introduced by the complex nature of peer-to-peer connection establishment. With current technologies, a sub-second download of any file is therefore impossible.

Latency can still be improved by prioritizing peers for latency, to reach smaller round-trip times and therefore faster connection-establishment. This mechanism remains to be solved by future work.

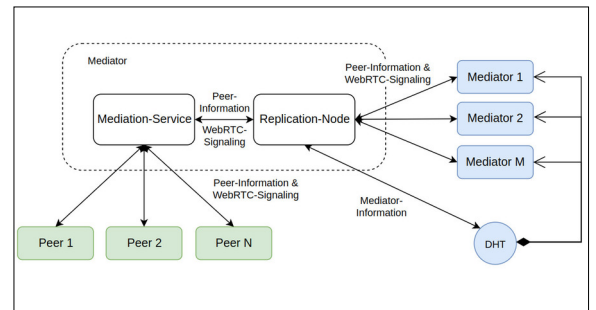
Web UI Preview to Interact with the Prototype.

Own presentation



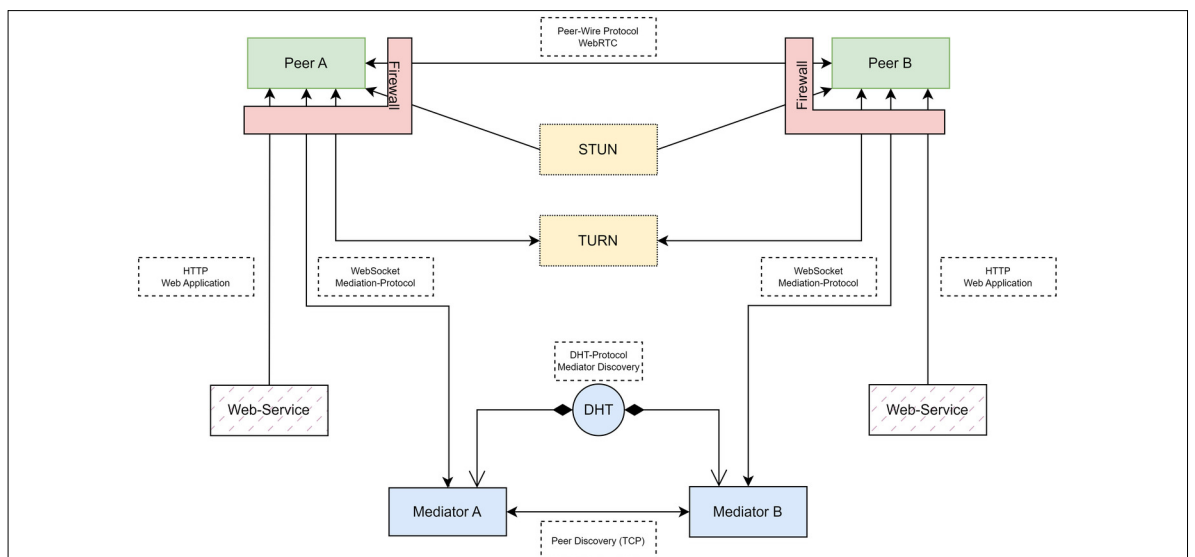
Context of the Mediator.

Own presentation



Overview of the Concept.

Own presentation



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Subject Area
Software, Internet Technologies and Applications, Networks, Security & Cloud Infrastructure