Abstract

Audio or video communication via internet has possibility of high latency and low downlink goodput due to restrictions of QoS by the provider. These problems can be overcome by using a peer-to-peer network, because this network can perform efficient routing mechanisms such as join, leave and client routing. Peer-to-peer networks also has some vulnerablelity for attackers, so that in peer-to-peer networks in general, equipped with defense features such as using the DHT Algorithm (Distribution Hash Table). On more advanced peer-to-peer networks, the algorithm used is generally the Academy which is still a DHT derivative. Academia has become a popular peer to peer network defense feature because it is considered to have relatively small overhead compared to the old algorithm, Chord. In addition, with the advancement of web technology, gave birth to a framework that can be used to connect audio / video communications. This is possible because of the web socket technology developed in the EasyRTC framework. The API (Application Programming Interface) on EasyRTC can be used as a feature to form a web-based peer-to-peer network using Node.js. But the difficulty of web-based peer-to-peer implementation is in the signaling process if the process needs to apply the Kademlia algorithm. In this study an audio / video communication was implemented based on EasyRTC on a peer-to-peer network with Kademlia features and compared it with audio / video communication based on EasyRTC on a peer-to-peer network without the Kademlia feature.

Keywords: QoS, EasyRTC, kademlia, peer-to-peer