

ABSTRACT

Inefficient use of bandwidth, resource and memory usage in unicast transmission methods toward client increase and the limit of broadcast transmission method to transmit video streaming appropriate with client needs, is the cause of the necessity of a more efficient method for network based video streaming implementation. This research has a goal to create video streaming service by implementing multicast transmission method, where this method is a combination of unicast and broadcast transmission method and more efficient.

In this final assignment, multicast will be implemented for real time transmission from cable TV network which will be streamed across Local Area Network in IT Telkom. This research has a purpose to use cable TV service such as monitoring, long distance learning, security system, etc. This final assignment will also analyze the performance of video compression using H264 codec in multicast and unicast network by observing throughput, delay, jitter, packet loss, and Mean Opinion Score parameters.

From the measurement and analysis, it can be seen that client increase in multicast system doesn't affect the value of throughput, delay, and jitter, while in unicast system those values are affected. The best MOS from 30 respondents in multicast 3 client bitrate 512 kbps network is 3,7. From that result, can be concluded that the usage of multicast network on video streaming service is more efficient compared to the other transmission method.