

ABSTRACT

Game is one of the most used multimedia services which can be accessed and used on Personal Computer (PC) and smartphone. Conventionally, game can only be played on a specific device in which some requirements need to be fulfilled in order to play the game. It could be a problem when a low-end device owner needs to play high-end game. However, by using mobile cloud gaming, it's possible for low-end device, including PC and smartphone, owner to play high-end game in their device. This final project is trying to implement the mobile cloud gaming using Moonlight Gamestreamin while measuring its Quality of Service and how much resource is used in the client device.

By using one high-end PC as game server/host and two types of smartphone, Android & iOS will simulate mobile cloud gaming system. To measure its performance, this final project will apply two measurement scenario while playing three types of games, in which network bandwidth and video resolution will be used as the changing variable.

Based on the result of the measurement, it can be concluded that Moonlight can run well in both of smartphone with maximum throughput average by 2320,5 Kbps and minimum delay average by 1,65 ms, both was run in 6 Mbps limited bandwidth. As for the resource usage, CPU usage and RAM usage, the data shows that maximum CPU usage average is 56,59% on 720p video resolution while the maximum RAM usage average is 85,28 MB on 480p video resolution, which can be concluded that CPU usage will increase when the higher video resolution is used, but it doesn't apply with RAM usage. Furthermore, it's shown that smartphone type does affect the value of Quality of Service with average throughput difference by 119,13 Kbps and average delay difference by 1,23 ms. The same thing happens with game type. It's also shown that game type does affect the value of Quality of Service with omnipresent game having the lowest throughput average by 1693,32 Kbps - 1986,7 Kbps and the highest delay average by 1,91 ms - 3,47 ms.

Keyword: *Mobile Cloud Gaming, Moonlight, QoS, Resource Usage.*