

ABSTRACT

In general, games can only be played on types of devices that meet the minimum gaming requirements, which makes it difficult for users with low-spec devices to play high-end games. However, by using mobile cloud gaming technology, devices such as smartphones based on Android and iOS can play Personal Computer (PC) based games.

In this research, author use a virtual machine as a game server installed on the Microsoft Azure cloud platform and use Moonlight gamestreaming as a cloud gaming platform and users can play high-end and PC-based games, namely Batman arkham city and Kart racers 2 games on devices. Android and iOS based smartphones. The results of this study also include Quality of service, Resource Usage, and Frame rate on the user side as well as measuring the minimum bandwidth requirements needed for the game to run well.

With the mobile cloud gaming system that used in this final project, Android and iOS based smartphone users can play PC based games on android and iOS smartphones because the game's computing process is carried out by a cloud server. For the use of CPU Usage and RAM Usage get results below 10% on smartphones. For QoS testing, the minimum network delay is 284 ms at 45 Mbps bandwidth, with an average throughput value of 1483 Kbps to 4629 Kbps. For jitter to get results between 16.4 ms to 30.1 ms. From the results of frame rate measurements, both smartphone devices can play up to 60 FPS with an average frame drop of 29.95% at 10 Mbps bandwidth and 0% at 45 Mbps.

Keyword: *Mobile cloud gaming, Virtualization, Virtual machine, Android, iOS, Microsoft Azure.*