ABSTRACT

The demand for digital infrastructure in home networks continues to grow in line with the increasing number of smart devices. This study aims to utilize the Android Set-Top Box (STB) model HG680P as a home server by using the Armbian operating system and the CasaOS platform. The STB, which is typically used for entertainment purposes, is repurposed into a lightweight server capable of running services such as file sharing, media streaming, and remote access via ZeroTier. Testing was conducted using Sysbench benchmarking, Quality of Service (QoS) evaluation, and file sharing performance tests. The Sysbench results showed maximum memory performance of 6058 MB/s, CPU performance of 2744 events/s, and I/O throughput of up to 7.23 MB/s. QoS testing with download, upload and streaming scenarios with a file size of 75 Mb, throughput reaching 10.2 Mbps, a minimum delay of 1.32 ms, jitter of 1.32 ms, and very low packet loss (maximum 0.56%). Meanwhile, testing file sharing with upload and download using the same file resulted in efficient average upload and download times with CPU usage below 15% and stable memory at around 25%. These results demonstrate that the HG680P Android STB is capable of functioning as an efficient, affordable, and reliable home server for household networks.

Keyword: *Home Server, Android STB, Home Network, Armbian*