

Utilization of an STB as a Linux and aaPanel-Based Web Hosting Server for the Information System Laboratory

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ABSTRACT

The utilization of refurbished computing devices as an alternative for providing low-cost server services has become a practical solution to overcome the limited availability of web hosting facilities for student laboratory activities. This study aims to develop a web hosting system using a refurbished FiberHome HG680-P Set-Top Box (STB) running Linux Armbian and managed with aaPanel as a learning medium for students of the Information System Security Study Program at Politeknik Negeri Bengkalis. The research employed an implementation-based method consisting of requirements analysis, system design, system implementation, service configuration, and server performance testing. The results indicate that the proposed system was successfully implemented as a low-cost web hosting server capable of running PHP-based applications, WordPress, and Laravel. In addition, the server can be accessed through both local networks and the Internet using Cloudflare Tunnel. Performance testing shows that the server operates reliably for laboratory-scale activities despite limitations in CPU performance and disk I/O throughput. Based on these findings, the refurbished STB is proven to be a cost-effective, environmentally friendly, and practical alternative for supporting server administration learning and laboratory activities.

Keywords: Set-Top Box (STB), Web Hosting, Linux Armbian, aaPanel, Cloudflare Tunnel, Low-Cost Server.