

INTISARI

SMK Al-Kautsar Purwokerto merupakan lembaga pendidikan yang memiliki berbagai data administratif, namun data tersebut masih tersebar di perangkat pribadi guru dan staf, sehingga pengelolaannya menjadi kurang efektif dan berisiko hilang saat perangkat mengalami gangguan. Penelitian ini bertujuan merancang dan mengimplementasikan sistem penyimpanan data berbasis cloud menggunakan Nextcloud dengan dukungan virtualisasi Proxmox sebagai solusi penyimpanan terpusat dan andal di lingkungan sekolah. Metode yang digunakan adalah Network Development Life Cycle (NDLC), yang terdiri dari tahap analysis, design, simulation, implementation, monitoring, hingga management. Pengujian dilakukan terhadap fungsionalitas sistem serta kemampuan server dalam menangani aktivitas pengguna secara bersamaan menggunakan Apache JMeter. Hasil pengujian menunjukkan performa sistem yang stabil dengan throughput unggah mencapai 12,8 request/detik (waktu respons 1.788 ms) dan throughput unduh sebesar 50,3 request/detik (waktu respons 60 ms). Seluruh pengujian berhasil tanpa error dan konsumsi sumber daya server tergolong ringan. Hasil ini menunjukkan bahwa sistem yang dibangun mampu beroperasi secara efisien dan andal dalam mendukung kebutuhan penyimpanan data di lingkungan sekolah, serta dapat menjadi dasar pengembangan sistem serupa dalam upaya mendukung digitalisasi administrasi secara berkelanjutan.

Kata kunci: Cloud Storage, Nextcloud, Proxmox, Penyimpanan Data, NDLC

ABSTRACT

SMK Al-Kautsar Purwokerto is an educational institution that manages various administrative data. However, this data is still scattered across the personal devices of teachers and staff, making data management less effective and prone to loss when devices encounter issues. This research aims to design and implement a cloud-based data storage system using Nextcloud, supported by Proxmox virtualization, as a centralized and reliable data storage solution within the school environment. The method used is the Network Development Life Cycle (NDLC), which consists of analysis, design, simulation, implementation, monitoring, and management stages. System testing was conducted to evaluate both functionality and the server's ability to handle simultaneous user activities using Apache JMeter. The results showed stable system performance, with upload throughput reaching 12.8 requests/second (response time of 1,788 ms) and download throughput up to 50.3 requests/second (response time of 60 ms). All tests were completed successfully without errors, and server resource usage remained low. These results demonstrate that the system operates efficiently and reliably to support data storage needs in a school environment and can serve as a foundation for developing similar systems to support sustainable digitalization of school administration.

Keywords: Cloud Storage, Nextcloud, Proxmox, Data Storage, NDLC