

ABSTRACT

Data management at the Social Services Agency (Dinsos) of East Java Province faces challenges due to attacks on the data center, which have caused data access disruptions and hampered activities at Dinsos. This study aims to identify effective solutions to overcome these problems by utilizing cloud computing technology, specifically Software as a Service (SaaS) using old laptops to install the service. This study proposes the implementation of SaaS as a solution to build an independent data storage system for Dinsos. With SaaS, Dinsos can access and manage data flexibly, efficiently, and securely without incurring significant infrastructure costs. Additionally, SaaS offers several advantages, including cost savings, improved performance, and high scalability. The research results indicate that the Owncloud system running on the Linux Mint operating system can meet the Dinsos' needs for document management, such as uploading and sharing documents. The Dinsos has a storage capacity of 109 GB, capable of storing 7,000 documents with an average size of 3 MB, totaling 21 GB of digital documents. It is known that Owncloud does not provide automatic data compression features, so compression is done manually either through external online services or by utilizing Command Line Interface (CLI) commands by the admin. However, the Owncloud system remains a viable solution as an efficient, secure, and cost-effective internal solution without having to fully rely on third parties. This study successfully implemented a SaaS cloud computing service using Owncloud on old laptops at the East Java Social Affairs Office. The system built is capable of providing local data storage services with upload, download, and data sharing features. With adequate storage capacity and open-source infrastructure, this solution has proven to be secure and suitable for the needs of institutions with hardware limitations.

Keywords: *Cloud computing, Dinsos, Data security, Data management, Data center, SaaS*