ABSTRACT

THE IMPLEMENTATION OF A FILE ENCRYPTION SYSTEM ON THE LINUX OPERATING SYSTEM TO MAINTAIN USER DATA CONFIDENTIALITY

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Data security is an essential aspect of managing information in the digital era. The Linux operating system, known for its reliability, requires additional measures to maintain the confidentiality of user data. The purpose of the research was to implement a file encryption system using the Asymmetric RSA (Rivest Shamir Adleman) algorithm on the Linux operating system using GNU Privacy Guard (GnuPG) software as a means to safeguard user data confidentiality. The research method included a literature study to understand the basic concepts of data encryption, the RSA algorithm, and the characteristics of the Linux operating system, as well as testing the implementation of file encryption systems using GnuPG in the Linux environment. The result showed that the implementation of a file encryption system with the RSA algorithm using GnuPG can enhance user data security on the Linux operating system. The implications of this research highlight the importance of considering data security implementation strategies in maintaining user information confidentiality in Linux-based computing environments.

Keywords: File encryption system, RSA Algorithm, Data security, Linux Operating System, GNU Privacy Guard (GnuPG).