Ministry of Higher Education and Scientific Research

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Department of Information Security

Study: (Morning)

Image Encryption In The Cloud

A Graduate Project Submitted to the department of Information Security of the College of Information Technology, University of Babylon, in Partial Fulfillment of the Requirements for the Bachelor's degree in the Information Security of Information Technology

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Abstract

This research explores the challenges and solutions related to image encryption in cloud computing environments. With the proliferation of digital imagery and the widespread adoption of cloud services, ensuring the security and privacy of images stored and processed in the cloud has become paramount. The study investigates various encryption algorithms, techniques, and methodologies for securing images in the cloud, including symmetric encryption, asymmetric encryption, hybrid encryption, and homomorphic encryption. Through the development of encryption prototypes and performance evaluation methodologies, the research assesses the effectiveness, efficiency, and practicality of encryption solutions in real-world cloud environments. Key findings highlight the importance of robust key management practices, regulatory compliance considerations, and performance optimization strategies for enhancing image security and privacy in the cloud. The study concludes with recommendations for future research directions, including exploring advanced encryption techniques, leveraging quantum encryption technologies, and enhancing usability and user experience in cloud-based image encryption solutions.