

Research on some solutions to ensure the security of private cloud computing systems

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Abstract: This study investigates key solutions for ensuring security in private cloud computing systems. Given the increasing adoption of private cloud architectures by organizations requiring enhanced data control, inherent vulnerabilities such as unauthorized access, data breaches, and insider threats pose significant risks. The research systematically analyzes the security challenges specific to private cloud environments, focusing on identity and access management, data encryption, network segmentation, and intrusion detection mechanisms. A multi-layered security framework is proposed, integrating robust authentication protocols, granular access control policies, and continuous monitoring systems. The effectiveness of these solutions is evaluated through a combination of theoretical analysis and practical implementation scenarios. Findings demonstrate that a holistic approach combining preventive, detective, and corrective controls substantially mitigates security risks while maintaining system performance and scalability. The study contributes to the field by providing a structured methodology for deploying comprehensive security measures in private cloud infrastructures, offering practical guidance for administrators and organizations seeking to strengthen their cloud security posture.

Keywords: Cloud security, private cloud, security solutions, cloud computing