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A Review on DoS Attacks on Cloud Services: Detection and Mitigation Techniques

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Abstract: *Distributed Denial of Service (DDoS) attacks are a critical and persistent threat to cloud infrastructure, disrupting services, degrading performance, and resulting in significant costs for businesses and cloud providers. As cloud computing continues to be a central component of modern digital infrastructure, the need for robust DDoS detection and mitigation techniques has become increasingly urgent. This paper reviews key approaches to detecting and mitigating DDoS attacks on cloud services, discussing the role of AI and machine learning, traffic analysis, and traditional defense methods. It also addresses the challenges these techniques face and proposes future directions that leverage edge computing, collaborative defense mechanisms, and advanced AI. By synthesizing the latest advancements and limitations in this field, this review aims to provide a comprehensive understanding of current DDoS defense mechanisms in cloud environments and highlight opportunities for improvement.*

Keywords: DDoS Detection, Cloud Security, Mitigation Techniques, Traffic Analysis, Cyber Threat Intelligence

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