

## **Intrusion Detection and Prevention System (IDPS) in Cloud Computing Using Anomaly-Based and Signature-Based Detection Techniques**

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**Abstract :** Virtualization and cloud computing are among the fast-growing computing innovations in recent times. Organisations all over the world are moving their computing services towards the cloud this is because of its rapid transformation of the organization's infrastructure and improvement of efficient resource utilization and cost reduction. However, this technology brings new security threats and challenges about safety, reliability and data confidentiality. Evidently, no single security technique can guarantee security or protection against malicious attacks on a cloud computing network hence an integrated model of intrusion detection and prevention system has been proposed. Anomaly-based and signature-based detection techniques will be integrated to enable the network and its host defend themselves with some level of intelligence. The anomaly-base detection was implemented using the local deviation factor graph-based (LDFGB) algorithm while the signature-based detection was implemented using the snort algorithm. Results from this collaborative intrusion detection and prevention techniques show robust and efficient security architecture for cloud computing networks.

**Keywords :** anomaly-based detection, cloud computing, intrusion detection, intrusion prevention, signature-based detection

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