Anomaly Detection System in Cloud with Adaptive Neuro-Fuzzy(ANFIS)

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Abstract: Cloud computing system, irrespective of continuous improvement, is still against suspicious activity and risky, vulnerable. Moreover, the construction of an anomaly detection component to detect anomalies in the cloud, is very important. In this research, an anomaly detection system in the hypervisor layer called a hypervisor diagnostic, introduced and placed under investigation. The use of fuzzy systems in intrusion detection systems can detect the presence of possible uncertain and ambiguous nature of anomalies provided in the cloud. However, combining the two systems together can lead to data-based modeling of the target. One successful approach based on objective data, system integrators fuzzy neural network to adapt and learn skills that make, model is called ANFIS (Adaptive Neuro-Fuzzy Inference System). In this research, the data KDDcup99 is used to test the proposed system. Neural network systems, has been compared with each other neuro-fuzzy and fuzzy neural network combined with genetic algorithm in the next step and its results are compared with other algorithms, The results show that using a genetic algorithm can reduce the number of database, In this case, this action reduces the computational complexity and increase the detection rate.

Keywords : Cloud computing, genetic algorithms, anomalies (anomalies)