



RESEARCH ARTICLE

INTRUSION DETECTION ON CLOUD APPLICATIONS

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Abstract— Cloud computing has grown from being a promising business concept to one of the fastest growing segments of the IT industry. So, cloud environment always remains vulnerable to attacks. The framework serves as an excellent platform for making cloud services intrusion tolerant. The feasibility of the framework has been tested by making cloud's Infrastructure as a Service (IaaS) and Data Storage Service intrusion tolerant. The proposed framework has been validated by integrating Intrusion Tolerance via Threshold Cryptography (ITTC) mechanism in the simulated cloud's IaaS. For this, the data centre authentication key is distributed among the hosts using Shamir Secret Sharing algorithm. Performance of the new simulated service model is measured using various performance metrics such as total execution time, intrusion detection time, recovery time, number of cloudlets etc. It involves, using proposed Cloud Intrusion Tolerance framework for securing cloud Data Storage. The correctness of user's data is ensured by using erasure-correcting code in the file distribution preparation to provide redundancy parity vectors. Performance analysis using erasure-correcting code for securing data storage is also done. We are also implementing the different networks such as SHIM (System Health and Intrusion Monitoring) is used as an exemplary host-based IDS to validate our approach, DRCP (Dynamic Registration and Configuration Protocol) is an auto configuration protocol in mobile AdHoc networks, OLSR (Optimized Link State Routing) protocol is a proactive, table-driven routing protocol in MANETs.

Keywords: - Cloud Computing; Data Storage; DRCP; Framework; Intrusion Tolerance; OLSR; Reed-Solomon Encoding; Shamir Secret Sharing; SHIM; Security; Threshold Cryptography

Full Text: <http://www.ijcsmc.com/docs/papers/September2013/V2I9201303.pdf>