New Approach to Mitigate XML-DOS and HTTP-DOS Attacks for Cloud Computing

Abstract

Moving towards Cloud Computing is accelerating and businesses are trying to present their software in the cloud. Cloud uses SOA and web services to present always accessible services which raise up threats and vulnerabilities. Users need to access Cloud from anywhere and this availability comes from presenting services as Web Service over the Internet. Web service in Cloud Computing specially in SaaS plays an important role to present business functionality. Web services are intended to be accessible from different places and applications. It leads to evolve some vulnerabilities which have to be seriously considered. One of major vulnerabilities is DDoS attack based on HTTP protocol and XML technology called HTDOS and XDOS which works on layer 7 OSI model and can easily pass through firewalls and take down the server. In the paper we develop a Cloud defender system called CSQD (Cloud Service Queuing Defender) to detect and mitigate XML vulnerabilities in web services. CSQD also applies a traceback solution to discover origin of attack. CSQD system is a self-learner system which means if an attack successfully brings down the server the CSQD finds the malicious request and adds it to its database to stop the same future attacks. Our results show that CSQD is effective and efficient in detecting and mitigating most of DoS attacks.
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Index Terms

Computer Science

Security
Keywords
Cloud Computing  SaaS  XDoS  HDoS  DDoS