Abstract

Web application security is the major security concern for e-business and information sharing communities. Research showed that more than 75% attacks are being deployed at application layer and almost 90% applications are vulnerable to the attacks. This is due to the avoidance of security requirements during implementation by the developer because they are not trained on solving security issues and often need to depend on security experts. In this paper, an approach for effective defenses against the application level attacks is proposed. The proposed system is an ontology based system that can predict and classify web application attacks. The system effectively stores threat, vulnerability and attack information. The attacks can be predicted by analyzing vulnerability and threats. The attacks are classified based on severity level of the attacks on security goals. Moreover, the system also provides suggestion for prevention and countermeasure to the predicted attacks, thereby assisting the developers in developing secure web applications. The results were promising when compared to the conventional method of knowledge base.

Index Terms

Computer Science
Security
Keywords
Ontology  Attacks  Vulnerabilities  Threats  Security Measures  Security Goals
Web application