Cyprus University of Technology

Faculty of Engineering and Technology

Bachelor's Thesis

KripyIDS: A Web-based IDS that Detects the Most Common Web Attacks

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CYPRUS UNIVERSITY OF TECHNOLOGY

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER ENGINEERING

AND INFORMATICS

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This work is dedicated to my girlfriend Georgia Kyriakou, who showed an exhaustive amount of support from the beginning up until the very end of my University days.

ABSTRACT

The growing landscape of web application attacks, coupled with an increased reliance on digital technologies, underscores the urgency for robust intrusion detection methodologies that address the underlying attacks. This bachelor's thesis delves into the mechanics and detection techniques associated with six of the most prevalent types of web application attacks, namely SQL Injection, Cross Site Scripting, Local File Inclusion, Remote File Inclusion, PHP Injection, and OS Command Injection.

The principal contribution of this thesis is the development of KripyIDS, a host-based intrusion detection system designed to recognize these common attack patterns covering a large percentile in the scope of web attacks. It leverages proven detection methodologies and serves as a framework that provides the potential to host any detector for any type of web attack.

Keywords: intrusion detection, web application security, web attacks