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FINAL YEAR PROJECT REPORT

RPIDS: RASPBERRY PI BASED INTRUSION DETECTION SYSTEM FOR INTERNET OF THINGS

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DECLARATION

We hereby declare that this project report is based on our original work except for citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Bahria University or other institutions.

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APPROVAL FOR SUBMISSION

We certify that this project report entitled "RPIDS: RASPBERRY PI BASED INTRUSION DETECTION SYSTEM FOR INTERNET OF THINGS" was prepared by ASMA BAIG, HAMZA SIKANDAR & MUHAMMAD ARSLAN has met the required standard for submission in partial fulfilment of the requirements for the award of Bachelor of Computer Science (Honours) at Bahria University.

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RPIDS: RASPBERRY PI BASED INTRUSION DETECTION SYSTEM FOR INTERNET OF THINGS

ABSTRACT

Internet of things has recently give a vast scope for making a smart and innovative environment. The major target of this project is to enhance the life of human and make it secure from vulnerabilities in the environment and make secure and give comfort to the industries, organization even the life of individual person. Thus there is a decisive need or desirable for intrusion detection system (IDS) make functioning for IoT devices to protect or mitigate IoT concerned security threads from damages the equipment's. This report explores different detections and prevention of the attacks like TCP traffic, DOS attack, DDOS, Port scanning, Back doors, CGI exploits etc. There are several tools are available to detect and automate the intrusion detection in IoT devices like snort, suricata, psense etc. we are using snort for defining rule against these attacks.

Snort has become the single most widely deployed and trusted intrusion prevention and detection technology in the world. Snort IDS is the open source security community worldwide can detect and respond to bugs, worms, malware attacks, and other security threats faster and more efficiently than other IDS engines. Furthermore, there are a wide variety of reference guides available for installing, configuring, deploying, and managing Snort IDS sensors and rule-based signatures on a network. This report presents a comprehensive survey of the IDSs designed for the IoT model, with a focus on the corresponding methods, features, and mechanisms. This report also provides deep insight into the IoT architecture, emerging security vulnerabilities, and their relation to the layers of the IoT architecture.

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