CMR COLLEGE OF ENGINNERING & TECHNOLOGY

(UGC Autonomous)

Kandlakoya,Medchal Road,Hyderabad – 501401

ABSTRACT

MAJOR PROJECT-PHASE 1				
DOMAIN OF THE PROJECT		Cyber Security		
TITLE OF THE PROJECT		Design and implementation of IPS using UTM		
NAME OF THE GUIDE WITH DESIGNATION AND DEPARTMENT		Mrs K.Sujitha (Assistant Professor,CSE (Cyber Security))		
DATE OF SUBMISSION		11/12/24		
TEAM NUMBER		B24		
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PROBLEM DEFINITION:

An Intrusion Prevention System (IPS) monitors network traffic in real-time to detect and prevent security threats, such as malware, viruses, and unauthorized access, using signature-based and anomaly-based detection. It must generate real-time alerts, provide detailed reports, ensure minimal network performance impact, and be scalable, user-friendly, and compliant with industry regulations. The IPS should efficiently manage resources and integrate seamlessly with existing infrastructure and security tools.

ABSTRACT:

The design and implementation of an Intrusion Prevention System (IPS) play a critical role in safeguarding computer network systems against malicious activities. Unlike traditional Intrusion Detection Systems, IPS offers advanced functionalities such as real-time threat identification, triggering alarms, event notifications, and prompt response mechanisms. However, the efficacy of IPS is challenged by several critical issues. This project addresses key challenges including ensuring the accuracy of intrusion signatures, managing high traffic volumes efficiently, optimizing network topology for effective deployment, logging and managing usage quotas effectively, securing the IPS infrastructure itself, monitoring sensor performance, and integrating with Unified Threat Management (UTM) frameworks. By exploring these challenges and proposing solutions, this project aims to enhance the reliability and effectiveness of IPS implementations in modern cybersecurity landscapes.

INTERNAL GUIDE **PROJECT COORDINATOR** **HOD-CSE(CS)**