Patent Search

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Abstract:

The present invention relates to a cybersecurity system and method designed to offer robust protection against Distributed Denial of Service (DDoS) attacks through a scalable and dynamic approach. It encompasses an advanced mechanism for dynamic resource allocation and intelligent traffic redirection strategies that enable real-time adaptation to varying levels and types of DDoS threats. By analyzing incoming network traffic in real-time, the system distinguishes between legitimate traffic and potential DDoS threats. Resources are dynamically allocated based on the severity and nature of the detected threats, ensuring that the protected network remains operational and accessible to legitimate users. Furthermore, the system employs sophisticated traffic redirection strategies, leveraging both predefined rules and machine learning algorithms to efficiently reroute malicious traffic away from critical infrastructure, thereby minimizing the impact of attacks. The invention offers significant improvements over traditional DDoS protection mechanisms, including enhanced scalability to handle sudden spikes in network traffic, increased efficiency through adaptive resource utilization, and superior protection capabilities that evolve in response to emerging DDoS attack patterns. This abstract underscores the innovative features of the proposed system, making it a vital advancement in the field of network security and DDoS mitigation. Accompanied Drawing [FIGS. 1-2]

Complete Specification

Description:[001] The present invention pertains to the field of cybersecurity, specifically to the protection of networks and online services from Distributed Denial of Service (DDoS) attacks. It focuses on the development of advanced mechanisms for mitigating such attacks through dynamic resource allocation and intelligent traffic redirection strategies. The invention integrates principles from network security, artificial intelligence (AI), and cloud computing to offer a scalable, efficient, and adaptive system capable of defending against the evolving landscape of DDoS threats.

[002] This invention is applicable in various domains requiring robust network security measures, including but not limited to, web hosting services, online commerce platforms, financial institutions, and critical infrastructure networks. The system is designed to automatically detect and mitigate DDoS attacks in real-time, ensuring the continuity and reliability of online services while minimizing the need for manual intervention and reducing operational costs.

[003] By employing a combination of machine learning algorithms, adaptive thresholding techniques, and cloud-based resource management, the invention represents a significant advancement in the capability to protect against DDoS attacks, making it a critical tool in maintaining the integrity and performance of networked systems and services in an increasingly digital world.

[004] Additionally, the invention aligns with emerging technologies and practices in cybersecurity, leveraging the scalability and flexibility of cloud infrastructure to dynamically adjust and allocate resources as needed during a DDoS attack. It embodies a forward-thinking approach to network security, integrating real-time analytics, and automated decision-making to ensure rapid response to threats. This capability not only enhances the resilience of networks to sophisticated and volumetric DDoS attacks but also provides a foundation for the development of future-proof security strategies that can adapt to the constantly evolving cyber threat landscape. The broad applicability and adaptive nature of the invention make it an essential component for securing modern networked environments, offering protection that evolves in

View Application Status