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DDoS Protection System for Cloud

- **Problem Statement ID – 1649**
- **Problem Statement Title- DDoS Protection System for Cloud: Architecture and Tool**
- **Theme- Blockchain & Cybersecurity**
- **PS Category- Software**
- **Team ID-**
- **Team Name- Hexagon**

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Problem Identification

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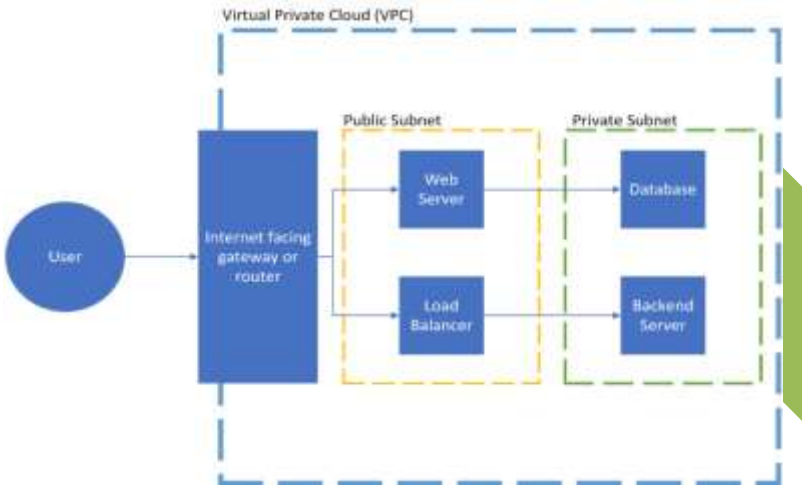
- Difficulty in distinguishing between legitimate traffic spikes and actual DDoS attacks.
- Detecting and identifying suspicious traffic originating from single IP addresses or specific IP ranges.
- Recognizing and analyzing abnormal traffic patterns and behaviors indicative of DDoS attacks.
- Protecting against diverse types of DDoS attacks originating both outside and within the cloud infrastructure.
- Preventing and mitigating attacks that target and disrupt the connection between clients and the webserver.
- Ensuring continuous high availability of services despite ongoing or attempted DDoS attacks.
- Developing automated tools capable of real-time detection, response, and recovery from DDoS attacks.
- Designing a resilient cloud architecture that can adapt to and withstand various and evolving DDoS attack strategies.



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TECHNICAL APPROACH

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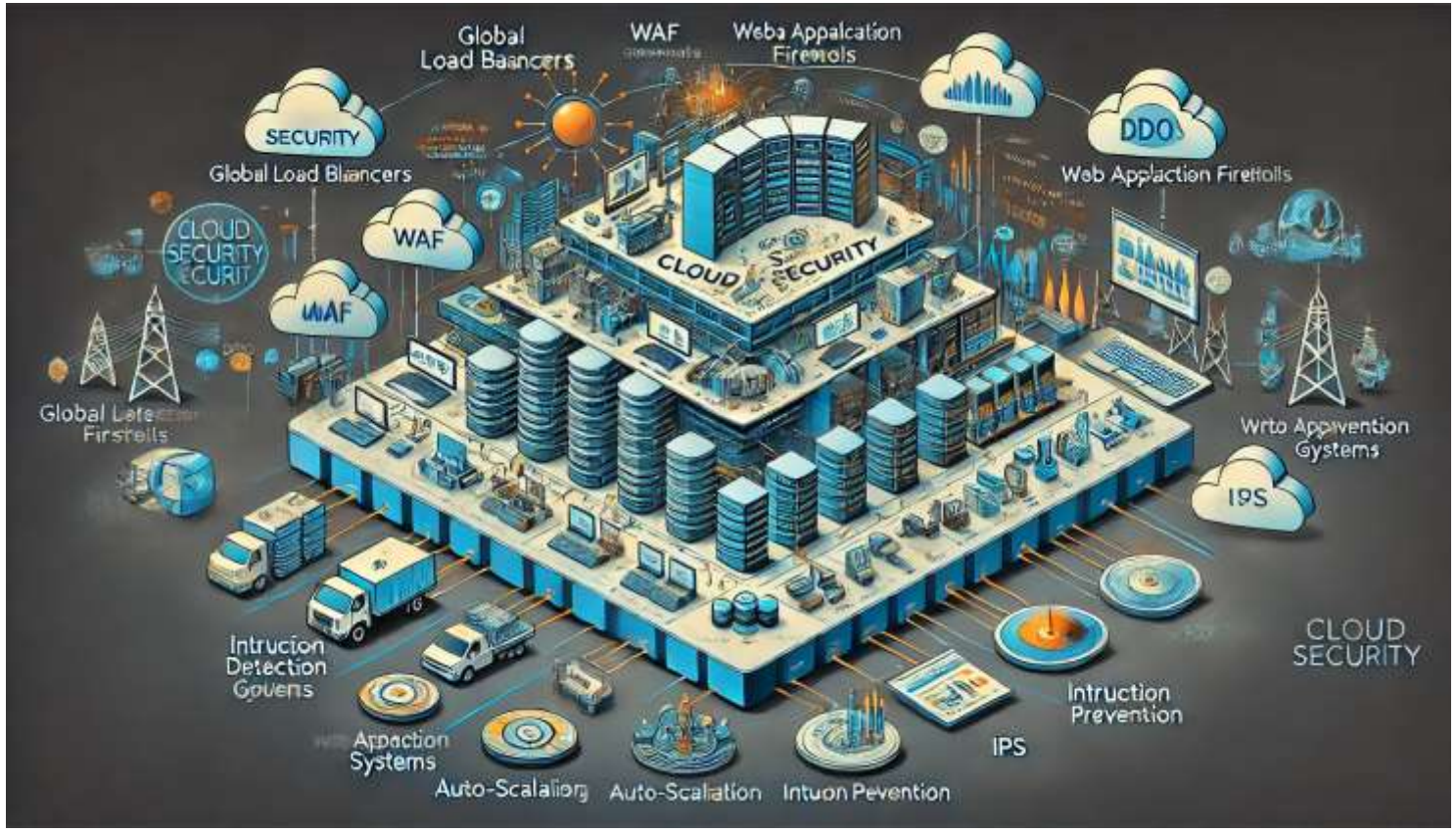

- Here is a visual representation of the technical approach, showcasing the multi-layered cloud security architecture designed to protect against DDoS attacks. This diagram highlights the various components and how they work together to ensure high availability and automated recovery during an attack.

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FEASIBILITY AND VIABILITY

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- Technical Feasibility: Existing cloud tools like WAF and IDS make implementation technically viable.
- Economic Feasibility: Cost is justified by preventing significant losses from DDoS attacks.
- Operational Viability: Seamless integration with existing infrastructure ensures minimal disruption.
- Scalability: The architecture is designed to grow with the business, ensuring long-term viability.
- Implementation Complexity: Overcome by consulting cloud security experts.
- Evolving Threats: Mitigate through regular updates and continuous monitoring.

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IMPACT AND BENEFITS

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- Enhanced security and trust from users due to robust DDoS protection.
- Business continuity with minimal downtime during attacks.
- Scalability to handle growing traffic without compromising security.
- Preservation of reputation by preventing service disruptions.
- Increased user confidence in interacting with online services.
- Reduced financial losses from downtime and attacks.
- Cost-effective security with automated detection and mitigation.
- Efficient resource utilization, contributing to environmental sustainability.

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RESEARCH AND REFERENCES

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