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Conceptual Oriented Analysis on the Security based on the SaaS Cloud Computing Architecture for the Cyber Security Issues

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Abstract: The Main aim of this research paper is to focus on the extensive literature survey to analyze the concept of the user-oriented cyber security and also to point out that concept on the cloud computing architecture as a SaaS. Actually Cloud infrastructure is closely related to its architecture and comprises of many cloud components. In this research paper, we proposed a cloud computing based architecture for facing cyber security situation awareness. Especially; we pointed out on the cloud computing security architecture for SaaS with reduction of the cost for data storage and also to investigate the efficient stream processing techniques to reduce operational delays. Main important thing is detect threats; we pointed out a parallel cloud based threat detection that integrates both signature-based detection and anomaly-based detection.
Keywords: Cyber security,SaaS,Cloud Infrastructure.

I. INTRODUCTION

A. About Cloud Computing Software as a Service (SaaS)

With the development of Internet technology and the maturation of applied software, there is a new software application model rising in the 21th century. The model provides software through the Internet, where manufactures place software on their own servers and clients can subscribe to applied software services via the Internet on their demand. The service fees depend on the number of services and the time of usage. Users do not need to purchase software anymore, instead, they acquire web-based software through providers by lease to manage company operations without local software maintenance that will be fully managed and controlled by providers. Software manufacturers not only offer the Internet application but also support offline operations and local data storage, which is beneficial to users because they can utilize it anytime in anywhere. For many small companies, SaaS is the best way to apply high technologies because it eliminates the barrier of purchase, establishment and infrastructure maintenance for companies. The cost of SaaS software is usually in a full package, including usual software license fee, maintenance fee as well as technical support fee that have been integrated as monthly rental fees. However, the range of SaaS is quite wide, covering from small or middle companies to large corporations. The charging method is also flexible. On the one hand, companies can add or subtract account on their needs. On the other hand, the cost from the actual account and time helps with reducing service fees and that is cheaper than the traditional charging method. What makes SaaS so particular? Actually, when the cloud was not popular, we already made contact with some of the SaaS applications; we can use Google and the Bing search engine via web browsers; E-mail is accessible in our computers without installing a search system or email system. In contrast, when we are using old version of Microsoft Office, like Word, Excel and PowerPoint, it requires installation. However, when it comes to Google Docs and Microsoft Office Online website, no installation is required, it is enough to just open the browsers, and register an account, then all the documents are read, and modification and save are available. Users do not even bother to update and maintain software. In addition, technical measures are applied to guarantee safety and confidentiality.

B. SaaS Cloud Computing Security Architecture

SaaS centrally hosts software and data that are accessible via a browser. The enterprise normally negotiates with the CSP (Cloud Service Providers) the terms of security ownership in a legal contract. Cloud Access Security Brokers (CASB) play a central role in discovering security issues within a SaaS cloud service model as it logs, audits, provides access control, and oftentimes includes encryption capabilities.

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C. The Concept Of Cloud Computing And The Main Security Issues In Information Technology

Cloud Computing technology in concept and its security, which is still a developing technology with great convenience and portability for exchanging information over the Internet via different platforms. Cloud Computing provides virtualized and scalable resources dynamically based on the network built with a great number of distributed computers instead of local computer or remote server. Meanwhile, the utilization and application of Cloud Computing is growing dramatically, which boosts a great number of new IT industries by integrating traditional computing technologies. Thus, this research paper also discusses and explores the practical utility and business value of Cloud Computing. In addition, due to the feature of cloud computing that is highly dependent on worldwide Internet, Cloud Computing is becoming the main target of Internet threats, such as malware or virus, technical vulnerability and negligent behaviours. Thereby, this research work also addresses the main security and privacy issues in Cloud Computing.

D. Main Concept

SaaS Based cloud computing architecture must create a collaborative approach that analyses event streams of normal and abnormal activity across all users to build a global threat monitoring system. Because many different users leverage the same cloud environment, cloud security is particularly suited to building a collaborative environment that instantly predicts threats through a worldwide threat monitoring system and shares threats among all users under the cloud umbrella. Cyber attacks continue to disrupt our way of life with innovative new approaches to seeding malware and stealing our data. Security must in turn actively work to disrupt the cyber spies, attackers and terrorists through a collaborative security approach that leverages the big data and analytics that thrive within the cloud. We've come a long way from my days on the FBI Intranet. It's time to fully embrace the future of security. That future is within the cloud. The future of cloud security is to make predictive security in the cloud has innovated security in a manner that will frustrate cyber spies for years to come. This technology collects and analyses unfiltered endpoint data, using the power of the cloud, to make predictions about, and protect against future and as-yet unknown attacks. This means predictive security in the cloud can identify attacks that other endpoint security products miss, and provide visibility into attacks that evolve over time. . This new approach to security will not just level the playing field between the attacker and security teams; it will shift the balance in the opposite direction and provide security with an advantage. Cyberattacks rely on stealth and surprise to disrupt, destroy and steal – the tools of a spy.

II. AUTHOR CONTRIBUTIONS

The other of the paper do all the work, the environment for research work is done by my best of my knowledge and supporting my family members.

III. ACKNOWLEDGEMENTS

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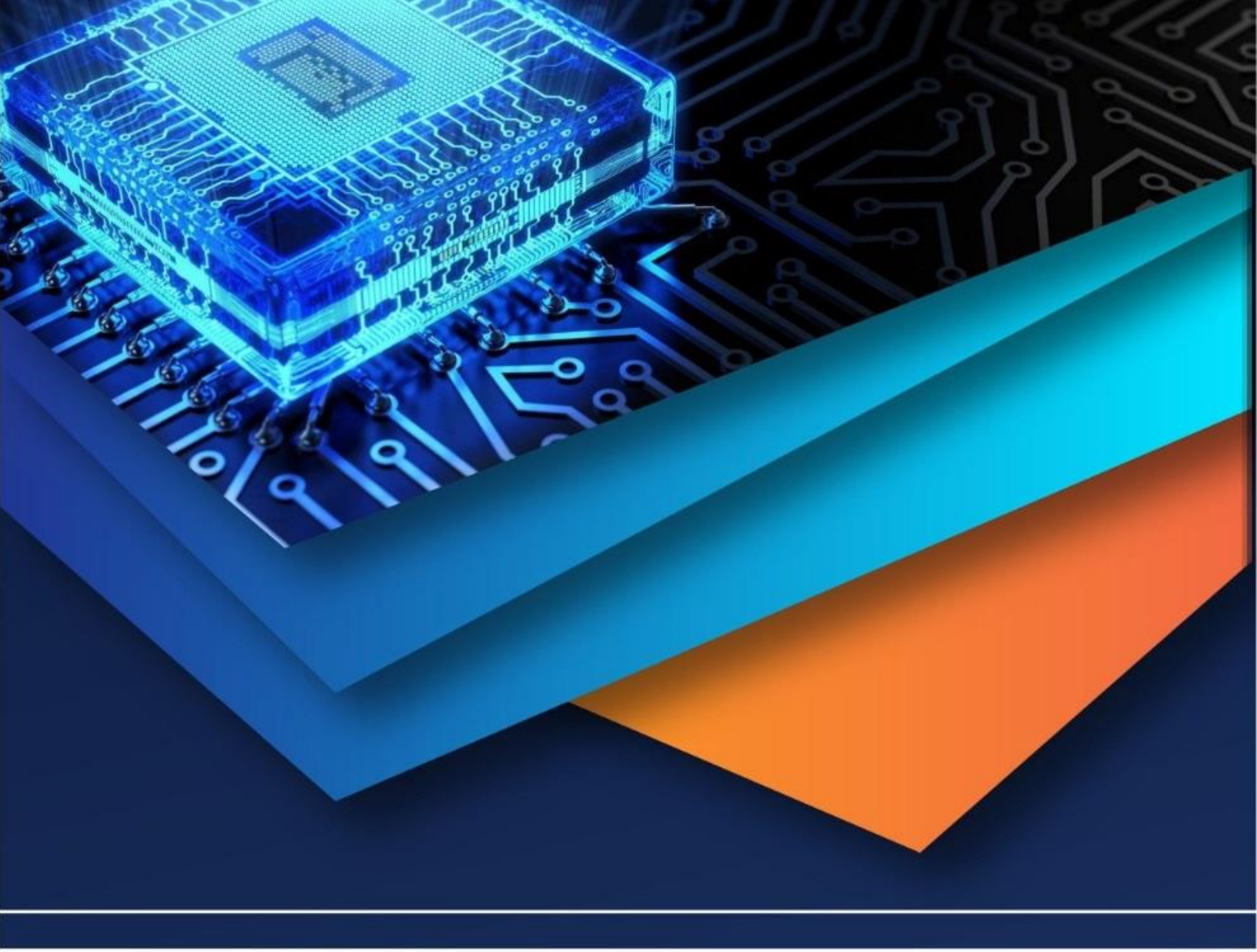
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