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

Dr. K. Sai Manoj[1], Ms. K. Mrudula[2], Mrs G. Maanasa[3], Prof. K. Phani Srinivas[4]
[1]*CEO, Innogeecks Technologies and Amrita Sai Institute of Science and Technology/Reviewer, Vijayawada, AP, India*
[2] *Director, Innogeecks technologies, Vijayawada, AP, India*
[3]*Research Scholar, Acharya Nagarjuna University, Guntur Dist, AP, India*
[4]*Editor and Reviewer, Director R&D, Innogeecks Technologies and Amrita Sai Institute of Science and Technology, Vijayawada, AP, India*

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.

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.

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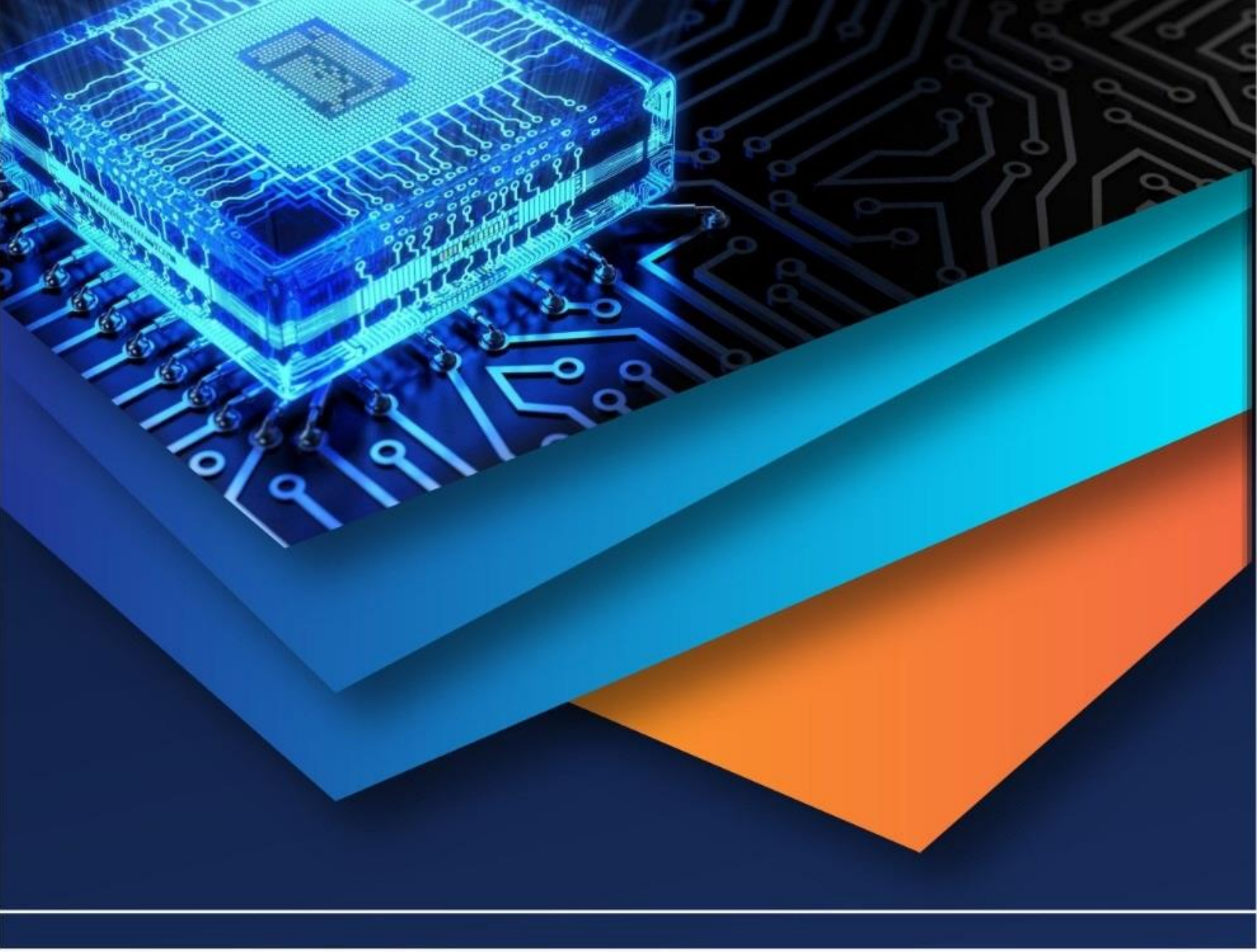
Dr K Sai Manoj, Founder and Executive Director of Innogeecks Global Services Pvt Ltd, Founder and CEO of Innogeecks Technologies and Founder of 3 start-ups based on IOT and Cloud Computing, is an Enthusiastic learner, Excellent Financial Advisor, Innovative and Visionary Leader, Insightful team builder and strategic planner, who has 10+ years of experience in Financial Services, Equity Research and IT- ITeS services to his credit. He has worked in Reputed Companies like WIPRO Technologies, Fidelity Inverstments.etc.,He is Proud of achieving many laurels in the field of Computers and Research. He is a Certified Ethical hacker, Certified Computer hacking forensics Investigator, Certified Security Analyst, Charted Engineer from IEI (India), Certified Blockchain Expert, Microsoft Certified Technology Specialist, AWS Certified Solutions Architect-Associate, Google Analytics Individual Qualification, IBM Block chain Certification, Certified EC Council Instructor and so on.He has a proven record of having 10+ certifications from the most sought after software giants such as Microsoft, IBM, Google, Face book, EC Council & Amazon besides this he has acted as a reviewer for the Journal of Super Computing (Springer) , Journal of Big Data (Springer) and Journal of the Institution of Engineers (India) – Series B (Springer). And also with his solid financial advise 21 start-ups of Kochi, Bangalore and Vijayawada have tread the success track.Talking about his research excellence, it is exciting to know that he has filed 3 patents and 4 more are in pipeline and has Published more than 25 research papers in reputed journals like Thomas Reuters, IEEE, Scopus etc., and shows keenness in researching on Cyber Security, Cloud Computing, Big Data / Hadoop, Block chain and Data Analytics.

Ms. K.Mrudula working as a Director for the Innogeecks Technologies. She was completed M.Tech from IIIT Hyderabad .She got more than 6 years of experience in Teaching. She published more than 5 research papers in various International and national research journals. She attended 2 FDP, and 1 workshop.

Mrs.G.Maanasa worked as HR manager in Jaya lakshmi Powercorp Ltd for a Period of 6 years after completing her M.B.A from RVR&JC college of Engineering. She is currently Pursuing her doctorate (PhD) in Development of Framework for Tourism Promotion in AP and ICT Integration from Nagarjuna University.

K.PHANI SRINIVAS working as a Director for the Research and Development and He Had Five Years of Industrial Experience as a team Leader in the research areas of Embedded Systems and telecommunications and also He is Having 13 Years of Experience in Academics, Research and Administrative reports. He received so many awards such as a Best Engineer, Best Teacher and also as a Best Researcher. Also He is acting as an Editor/Reviewer for so many top international Journals.
The Focus of His research work is Design of Patch antennas which are Suitable for Defence and Space Based Applications. He received appreciation award in various National and International Conferences. He received Best Coordinator Certificates from IUCEE, IIT ROORKEE,IIT Bhubneswar,NCAT,ELAT and INTEL. He attended WIPRO training Program. He completed one Joint research Program with IIT Kharagpur.He Organized various student level Competitions, workshops, Faculty Development Programs, Guest lectures, Orientation Programs, and Subject Based Seminars with scientists and Academicians. He is doing research work under the valuable Directions of Eminent Scientists. He had done technical Discussions with experts at Space Station, Antenna Research Lab, and Radar station. He Published research articles in Various Scientific Journals. He is an active Editor/Reviewer for the so many top most international journals.



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