ASSIGNMENT 2 – PAPER REVIEW

CSCI 5409 – Advanced Topics in Cloud Computing

Dhrumil Amish Shah (B00857606)
dh416386@dal.ca

Assignment 2 – Paper Review

Research Area – Cloud Computing - Deployment models, delivery models, risks and research challenges

Summary

The central idea of the study is to distinctly explain the characteristics of cloud, the delivery and deployment models used for cloud applications. The article also explains the risks and problems faced in this area of study. The article explains the origin of cloud computing and highlights some of the essential characteristics such as multi-tenancy, shared resource pooling, global network access, service-based architecture, dynamic resource assignment, pricing and many more[1].

The study then talks about Software-Platform-Infrastructure (SPI) model. This model mainly focuses on the three delivery models, most widely used in cloud computing viz Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). IaaS offers renting some vital resources aiding the infrastructure of the cloud applications such as network, storage, processing which are the basic components of any application. Some well-known IaaS vendors are Amazon EC2, S3, Sun Microsystems. PaaS offers flexibility and benefits to the users with respect to the ease in deployment of cloud applications, with the infrastructure of the application being already setup. Some popular vendors are Microsoft Azure, NIST. PaaS vendors offer numerous services such as a virtual platform for application development, toolkits for the environment, and a channel for public application developers. SaaS offers the software directly to the users, for them to directly use the cloud application over the Internet. SaaS vendors are Zoho Suite, Apple's MobileMe, Google Docs[1].

The deployment models discussed in the article are public cloud, private cloud, hybrid cloud and community cloud. Private clouds are enterprise-owned or leased in the same of a single enterprise. Public clouds are available for use to everyone. Hybrid clouds are generally a constitution of two or more clouds bound together by standard protocols. Community clouds are shared among organizations which make use of similar functionalities or offer similar services[1].

The article also talks about the risks and challenges such as security and the various attacks that a cloud application is susceptible to like Back Door, Spoofing, Man-in-the-Middle, Replay, TCP Hijacking, Social Engineering, Password Guessing, and Trojan Horses and Malware. The study details some of the competing commercial cloud service providers such as Amazon, Microsoft Azure, Google App Engine. These organization offer cloud services vividly over a broad range of services which help the developers compare each of them for decision-making during implementation[1].

Answers

Answer 1:
The research article enlists and further explains the characteristics, delivery models, deployment models and challenges associated with them in reference to cloud computing. For each of the topics mentioned, the authors have very clearly described the features of each of the delivery models and the cloud deployment models. The authors have very distinctively described the security of cloud applications which is one of the crucial concerns of cloud-based applications. The authors have also explained the types of security attacks that are posed to any cloud application. The commercial products for cloud-based services and their service providers are also described in the research paper. The authors have addressed these topics and explained them the delivery and deployment models in detail. They have also explained the issues with cloud computing in detail to simplify the understanding of the fundamentals of cloud computing.

Answer 2:
The most important and relevant topic in the research article is the explanation of features of cloud delivery models by the authors. The relevance of this research area in cloud computing with the respect to its usage while making some important decisions for the cloud application development in our coursework. Another important area of interest is how any cloud application handles the security and the various challenges an application is susceptible to. This will help me plan the resources and architectural design of my cloud application in a manner that it is least susceptible to security attacks. The research paper also highlights the deployment models that can be used for cloud applications with various requirements.

Answer 3:
The research paper covers all almost all the necessary aspects of cloud computing, it's delivery and deployment models. I would like to read more about the cloud delivery models in details and their implementation across multiple platforms. The research paper I found relevant to my interest on the Internet is – "**Cloud Service Delivery across Multiple Cloud Platforms"**[2]**.** The reason why I would like to explore this is because as my coursework project is a Travel Blog application, the chances of it being used on various platforms is high. This research paper would help me plan the development of the application in an organized way.

References

[1] L. Savu, "Cloud Computing: Deployment Models, Delivery Models, Risks and Research Challenges," 2011 International Conference on Computer and Management (CAMAN), 2011, pp. 1-4, doi: 10.1109/CAMAN.2011.5778816.

[2] I. Houidi, M. Mechtri, W. Louati and D. Zeghlache, "Cloud Service Delivery across Multiple Cloud Platforms," 2011 IEEE International Conference on Services Computing, 2011, pp. 741-742, doi: 10.1109/SCC.2011.107.