Cloud-Based Systems

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Abstract—Virtual computing service tool that allow run time adaptation and elasticity which is part of cloud computing, that enable customers to acquire and release computing resources. Run time adaptation is one of the main aims of new cloud-based application Development methodology in this research work that allow users to make changes at run time and help developers to reuse software components so that they can plug-in third party components into their application.Cloud-based development methodology embedded on virtual machine offered by cloud utility providers are becoming increasingly powerful, and becoming more the ecosystem of cloud services. This research concentrates on this type of adaptation but in the context of Cloud-based services.

Index Terms— Cloud computing, Web Services, XML,WSDL SOAP, Adaptation.

I. INTRODUCTION

Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction." [12]..

While this method continues to create a new atmospheric of opportunity for enterprise, it introduces new operating and business models that could easily allow customers to pay for the resource they effectively use, instead of making heavy upfront investment. The most important goal of cloud computing is to provide on demand computing services with high reliability, scalability and availability in distributed environment.

It is well recognised that Cloud Computing is one of the most impressive and more challenging subject area to the current and future of information Technology (IT) domain, it intends to reduce the entrance barrier and application types as well as new business models in different angles, especially in terms of cost reduction, reliability, adaptability, security as well as easy to maintain [2] [11], [9].

II. MOTIVATION: ACHIEVING CLOUD ELASTICITY VIA RUNTIME ADAPTATION

Achieving a reliable adaptation(effective service delivery and flexibility), elasticity and availability in relation to cloud-based services happens to be one of the most advanced new developments methodologies in the field of cloud computing. There is a tremendous need for any designed methodology strictly for publishing software services to the internet, to provide such adaptation capabilities for effective service delivery and satisfaction, and this is what the research work/paper intends to achieve.

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III. WORKS REVIEWED

A. Taxonomy of Compositional Adaptation

The authors in their report [9], [1]. Proposed adaptations in the design methodology that involve not only changes in program flow, but also run-time re-composition of the software itself. They discuss the supporting technologies that enable dynamic re-composition and classify different approaches according to how, when and where re-composition occurs. They further highlight some key challenges that need to be addressed to realize the full potential of run-time adaptable software..

IV. ADAPTATION FOR CLOUD-BASED APPLICATION

A. Reason for Adaptation

The current and dynamic nature of the global enterprise business environment in relation to the web services with regards to cloud computing should be highly reactive and adaptive(reference). They should also be equipped with some technique and methodology to ensure that they are able to adopt to meet the adaptation requirements. Standard services must always be used to implement and be able to tolerate continues changes and variations. Services can easily be compromise due to reshaping in structures, in behavior and policies. Such dynamic alteration can be identified, detected, and anticipated in the small business administration (SBAs) application during the monitoring of the application execution and its environment [10].

Adaptation can be defined as a process of modifying small business administration, so that it could immediately satisfy new requirements forecasted by changes of the environment as a result of adaptation strategies designed by the system integrator. But more importantly, adaptation should always be allowed to be triggered as to enhance the security issues, it should be autonomous by triggering the execution and monitoring application either by self-adaptation or by human-in-the-loop adaptation [10], [5].

The authors [4], [2], proposed to design applications that could be used for integrating both software and hardware components that would be able to communicate. Applications must use context information from components to measure the quality of the proposed services in order to adapt them in real time.

V. SUGGESTIONS MADE

All cloud-based service providers should be a well known servicing company and dully registered with a single body like MASTER CARD MONITARING BODY IN THE USA and other parts of the world should not be allowed direct access to the customer, that will definite bring confidence and satisfaction to most customers.

VI. CONCLUSION

The reality for ensuring and applying security and reliability to Web Services arises from the benefits of Software Components. This includes a higher level of reuse of Software components, and further promotion of general benefits of component of new cloud-based application development methodologies. Data security is generally considered as an integral step in component based new application development methodologies. Software components and Web Services both communicate via a well defined interfaces, hence applying security to Web Services appears to be equally beneficial.

VII. FUTURE WORK

Cloud-Based Virtualization should also be made available to behave as the suggestion made using financial strategies to ensure security, reliability and integrity of the data stored on the cloud-based systems.

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