

Service Provisions for Cloud Costumers

¹Basheer Abdul Mutalib Hasson, ²Haider Ali Mohammed

Abstract: This term paper gives an introduction to service cloud explaining the SaaS software as a service. The basic goal of the paper is to explain to the reader the drawbacks of the traditional ways of service provisions to the costumers and introduce to the reader the new dimensions in service providing that is Service cloud through the cloud computing techniques. The world is a not the traditional service centre any more. Companies are moving towards the service solutions such as software as a service, unlike the traditional on premise customer support and service centres the world now needs global online dynamic costumer support and service solutions. This paper illustrates three things what is SaaS, How useful it is, and what is the future of service cloud.

Keywords: Software as a service, Cloud security, virtualisation, CRM, Customer Support.

1. INTRODUCTION

Ever since the computer was created, we are trying to minimize the hardware needs, From the large, generation 1 computers we moved to minimizing the size of computer, then came the multitasking in the 1960s, network computers were introduced in the 1990s, and the now grid computing and virtualization. This is an open view that all the business corporations, educational institutions, costumer care, everything is now going cloud. This major shift from traditional techniques of computing to the cloud and virtualization is only because of great benefits that we get from cloud computing. A simple question that arises that, when we can buy milk then why buy a cow?

Think of your great mainframe as a cow, the milk is its service. What would the world be if your cow was to go global, meaning that you don't care where the cow is as long as you get the milk, so what you do is instead of buying a cow you buy an account form a Farm (online web server or cloud server), you connect to the farm through an internet connection and get all the milk you want.

In traditional computing when we want to establish a customer care centre or service centre or a gaming café what we do is buy the telephones , personal computers , then there is a server, maybe a main frame, office furniture , then employee training etc. Just imagine how much the cost ranges. And if we want to upgrade the environment the same procedure follows.

Service cloud is the type of infrastructure that implies the cloud technique of SaaS (Software as a service)[11] .What we get is that we pay the cloud service providers for an online service centre, customer care etc. Now the hardware cost is saved[4].We only need some personal computers to update the data; rest is managed by the cloud provider. And the costumers would not have to visit the on premise service centre. Services would only be an internet connection away.

2. WHAT IS SERVICE CLOUD

A cloud service is any resource that is provided over the Internet.[5] The most common cloud service resources are Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS).[6][11]A Service cloud is like we use salesforce.com's customer service software-as-a-service solution for our customer services or application services or even gaming services. The actual difference with traditional customer support is the SAAS model. This service support is delivered by registration over the internet, unlike the on-premise customer support. So there's no hardware or software to purchase or maintain, and no lengthy deployment cycle.

A. SERVICE CLOUD ARCHITECTURE :

To User Tier:

The user tier normally consists of the web browser like Firefox, IE, and Chrome .Other than the web browser there can also be client applications. These usually handle the input and output from the cloud server. . It offers organizations significant advantages in terms of reliability, manageability, security, scalability, and performance.[7]

Application Tier:

Comprised of a single or multiple Windows servers, depending on the size of the DocuShare Private Cloud deployment [7]. The application tier includes the application server which handles requests from users and processes them. The application tier provides:

1. Clustering of application servers
2. Load balancing
3. Management of user session data
4. Management of database

Data Access Tier:

The data access tier handles the processing of all requests for data i.e. either from a structured and managed SQL or from an unstructured and unmanaged file system. This tier is used to run and manage the database architecture[7].This tier generally provides:

1. Clustering for scalability and flexibility
2. Layer of abstraction
3. Separating business logic from data

Data Storage Tier:

The data storage tier is used for the physical storage of data. Sometimes it is the same physical server as the data engine tier. Otherwise a Storage Area Network (SAN) was used for storage optimization and flexibility.

B. Why Service Cloud:

Why not Service cloud when we can build applications and make the customer service experience better than ever?

Following are six reasons for why service cloud.

1. **Single Platform:** Service Cloud is global so the services and applications hosted are similar for all the users.[11]
2. **Virtualization and Globalization:** Single hardware infrastructure provides the work running multiple operating system instances on same hardware i.e. the cloud server.
3. **Time Saving:** As everything is provided inline so no limitation of time. Institutes and organisations can evolve within weeks.[11]
4. **Dynamic Customization:** Customizing the service applications is as easy as pointing, clicking and dragging.
5. **No tension of Maintenance:** All the security issues, database management , technology upgrades may that be hardware or software are the headache of the service cloud providers and we the clients or users are to wait and enjoy.[11]
6. **Global integrity:** Service cloud means that the services are available 24/7 all around the world.

3. SAAS (SOFTWARE AS A SERVICE)

The trend of software as a service is replacing the concept of software as a desktop-based application is spreading rapidly[12]. The applications are accessible from various client devices through either a thin client interface or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited users

specific application configuration settings[2]. In this model, service providers install and run the application software in the server and the users access the software from cloud clients. SaaS is a software model in which applications are hosted by a service provider and made available to customers over a network[9]. This removes the need to manage the software on the user's own computers simplifying maintenance and support. Examples of SaaS include Netflix, Photoshop.com, Acrobat.com, Intuit QuickBooks Online, Gmail, and Google Docs.[2]

SAAS ARCHITECTURE:

Distribution Tier:

The distribution tier handles load balancing. This tier is associated with distributing work to optimize resource utilization, throughput or response time. There are two reasons for distribution and routing. One reason is to influence multiple, geographically distributed data centers for flexibility. Reason is that different customers can be routed to different sites. All sites are used for production service requests and they act as alternate sites for each other, thereby efficiently utilizing resources and providing high availability. Another reason for routing certain customer service requests is to satisfy the international data privacy laws. Data privacy is a major issue and different countries have taken very different approaches to protecting their citizens' data. If the SaaS vendor wants to develop business in such countries, internationally distributed production environments may be required and routing of requests is necessary.

Application Tier:

Rather than just a general application server running your application, there are different types of specialized servers providing specific types of functionality.[12]

Identity Management Server:

Security is an important issue for a SaaS environment. Having the ability to flexibly handle identity management in a standardized way will allow customers to force multiple modes of authentication.

Integration Server:

Providing a specialized integration server with existing connections to industry standard platforms such as HR, CRM, financial, etc., will make it much easier for customers to integrate a SaaS solution with their existing systems. Integration is critical components in your architecture strategies to incorporate SaaS successfully[8]

Communication Server:

All the communications are additional components of a SaaS offering that are often required, yet sometimes overlooked. It is useful to have the ability to reach users in multiple ways (i.e., email and text messages) to let them know they have work to do in the SaaS application.

Administration Tier:

Administration of the overall SaaS environment and business itself is a unique component of a SaaS solution.

Metering:

Depending on the billing model for a SaaS solution, there may be a need to meter customer usage and bill accordingly. This metering can either be provided as a component of the SaaS solution itself or may be a service supplied by a hosting provider.

Billing:

Billing can also be handled by a component within the SaaS environment or by another billing service. Billing process gets input from a metering component or contractual details in the case of a fixed regular fee. An invoice is created from this data and presented to the customer for payment [13]

Payments:

Once an invoice has been generated and presented to the customer, payments must be processed. This can include processing credit card, checks or any other form of transaction.[13]

Operations:

The operations group is generally responsible for keeping the SaaS environment up and running and for making sure the service is provided for each of the customers. If the administration component has the management tools to assist the operations group, it keeps everything efficient.

Support:

Ideally, the support, help desk is included into the administration component. Clients can submit tickets either directly from the application or by phoning the help desk. In addition, they will also be able to keep track of ticket status.

Infrastructure Monitoring Tier:

A SaaS infrastructure needs to be both locally strong (basic hardware termination and local failover) as well as geographically strong (DR failover capability to a remote location in the event of a complete data center). It is important to be able to operationally monitor the entire environment from the hardware level all the way up to the application internals so that outages can be avoided or handled promptly if they do occur.[9]

SLA Reporting:

One of the easiest ways to manage SLA is to monitor and report on the appropriate metrics. Automating this process and providing access to the reports right from the application gives customers confidence in the strength of the SaaS environment.

Support Metrics:

Tracing support metrics is an important part of managing the overall support function. Much of this data can be provided by a monitoring component.

Quality Metrics:

Measuring quality can be a personal exercise but there is value in describing and implementing quality metrics. The feedback loop created by this process is helpful in making sure a business is performing at the desired level.

Implementation:

- Implementation of the SAAS requires following steps to be followed:
 1. Making UXD the foremost priority: make the user experience design and the interface our first priority.
 2. Scooping up with the changing environment: The software development these days is breathtaking and it is not easy to rapidly update the system but new trends must be followed.
 3. Adopt open standards: As the SAAS is to be used in different devices and platforms the system must be developed and implemented with open standards.
 4. Wireframe before design: A *wireframe* is simply a conceptual visualization of software; the purpose is to avoid being distracted by design elements so the focus can remain on the business function.
 5. The cloudy infrastructure: As the services are running on insufficient hardware so the infrastructure must be cloud based.
 6. Proper design documentation before implementation: The major failures of service clouds are due to poor communication of architectural designs. To maintain the service quality the architectural design must be properly documented and debugged before implementation.

Advantages:

- You can sign up and rapidly start using innovative business apps
- Apps and data are accessible from any connected computer[5]
- No data is lost if your computer breaks, as data is in the cloud
- The service is able to dynamically scale to usage needs[5]

4. CONCLUSIONS

This term paper explains the drawbacks of traditional ways of service provisions to the customer and explores the new dimension in service providing that is service cloud through cloud computing technique. The paper also illustrates the world of SaaS software as a service and its implementation to form the service cloud. In the end the whole paper in a nutshell says that service cloud is the future end. It would be best business solution to move to service cloud as early as possible. If one wants to be prosperous in this changing world.

REFERENCES

- [1] K. Stanoevska-Slabeva, T. Wozniak Grid and Cloud Computing-A Business Perspective on Technology and Applications
- [2] Springer-Verlag, Berlin, Heidelberg (2010) National Institute of Standards and Technology, The NIST Definition of Cloud Computing, Information Technology Laboratory, 2009.
- [3] E. Naone, Technology overview, conjuring clouds, MIT Technology Review, July–August, 2009.
- [4] Merrill Lynch, The cloud wars: \$100+ billion at stake, Merrill Lynch, 2008.
- [5] www.ibm.com/cloud-computing/what-is-cloud-computing
- [6] Architecting Software as a Service for the Enterprise IT@Intel White Paper Intel Information Technology Cloud Computing October 2009
- [7] www.xerox.com/downloads/usa/en/services/white-paper/Xerox-DocuShare-Private-Cloud-Service-White-Paper.pdf
- [8] Software as a Service (SaaS): An Enterprise Perspective, October 2006
- [9] www.ncr.com/wp-content/uploads/15FIN3105_SaaS_wp2.pdf
- [10] sei.cmu.edu/library/assets/presentations/Cloud%20Computing%20Architecture%20-%20Gerald%20Kaefer.pdf
- [11] dialogic.com/~media/products/docs/whitepapers/12023-cloud-computing-wp.pdf
- [12] zscaler.com/pdf/ebooks/essential_guide_to_cloud_security.pdf
- [13] Searchcloudcomputing.techtarget.com/definition/Software-as-a-Service.