

# Enhancing Cloud Capabilities through Web Service

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**Abstract-** Now-a-days Cloud Computing is popularly known as Internet Computing. It helps in sharing data, computing, and provides services transparently among users of a massive grid. It became widely accepted by the user because of its advantages that involves, reduce costs, increase business flexibility and/or provide business continuity. Cloud Computing is becoming increasingly relevant, as it will enable companies involved in spreading this technology to open the doors to Web 3.0. In this paper the basic features of cloud computing are presented and compared with those of the existing technology of Web 2.0 and Web 1.0. The paper describes the concept of computational resources outsourcing, like applications and services on which they operate referred to a real application and better enhancement of different cloud services.

**Index Terms-** Cluster based services, grid computing, Service-Oriented Architecture, Web Services.

## I. INTRODUCTION

With cloud computing, IT capacity can be adjusted quickly and easily to accommodate changes in demand. While remotely hosted, managed services have long been a part of the IT landscape, a heightened interest in cloud computing is being fueled by ubiquitous networks, maturing standards, the rise of hardware and software virtualization, and the push to make IT costs variable and transparent [1]. Cloud computing is becoming more popular for the means of easy implementation and opening the doors to the use of 3<sup>rd</sup> generation web services i.e. web 3.0. Where not only the peoples are able to communicate but also collaborate, share their information and may perform user specific applications. However, to build the cloud more powerful and effective, the right network selection is the important consideration within which implementation of cloud computing may be under taken.

For allowing different companies to implement web 3.0, It is important to have knowledge of information regarding portals provided by respective companies support web 3.0. Once said information are gathered, it is easy to go for the comparative study of existing web services provider web 1.0 and web 2.0. Then we briefly explain which the extra services are provided by web 3.0. and how they can be provided.

## II. BRIEF HISTORY

Cloud computing is basically known as computing over internet. It can be enhanced. this means not only user able to use a particular web based application but also he may participate in its computational procedure by either adopting ,demanding or pay per use basis[3][5].

Cloud computing is very new to the market. But somehow its origin and behavior resembles with grid computing, which is a very powerful but not free from complexities. However the basic requirement for implementing cloud computing and grid computing are similar starting from the hardware & software requirement to the different versions of operating system they support. So if one user desire to implement such a new computing application, may require to opted, both of the computing paradigm. Grid computing is something similar to cluster computing, it makes use of several computers connected is some way, to solve a large problems quickly [4]. Till date very few search engines are available which uses both technologies for searching and retrieving information.

Moreover, Cluster computing [8] can also be used as a relatively low-cost form of parallel processing for scientific and other applications that lend themselves to parallel operations which can be used in order to design and implement any such application. On the other hand the cluster based application [9] efficiently deals with cloud based services .So it can taken as one of the better option for cloud based application for homeowner parallel computing .

## III. CLUSTER BASED SERVICES VS GRID BASED SERVICES

Some of important features of cluster based services and grid computing based services given below:

Grid computing is focused on the ability to support computation across administrative domains sets it apart from traditional computer clusters or traditional distributed computing. Grids offer a way of using the information technology resources optimally inside an organization. In short, it involves vitalizing computing resources. Grid computing [8][9] is often confused with cluster computing. Functionally, one can classify grids into several types: Computational Grids (including CPU scavenging grids), which focuses primarily on computationally-intensive operations, and Data grids, or the controlled sharing and management of large amounts of distributed data. Cluster computer is a set of CPU nodes that are used to solve any problem over a network. The way in which this cooperation is accomplished among the computers to solve a problem is called Cluster Computing. In Grid computing, the idea is very similar to

Cluster Computing however they are used for solving large problems. Again Clusters are usually homogeneous and Grids are heterogeneous. Homogeneous is where all CPU nodes have the same Hardware configuration and OS. A cluster of clusters is usually a Grid [10]. CPU nodes that are part of a Grid need not be homogeneous and are usually spread across LANs or WANs. such as we can say grid computing is an evolutionary ingredient for cluster preparation. The difference between these two can be studied in terms of their capability of management of geographically distributed computing resources (The recourses used by some computational problems) such as used to describe accessible computing equipment or operation. Another difference between the two is both support different hardware and software as well as support different versions of operating system. So depending on that they provide different applications which will help us to improve the cloud services. So whenever there is a web based application need to be provided, they can adopt the features by the two depending upon its requirement. Though clusters and grid computing are not for web application but help the web application but can reduce the complexity associated with it by their different environment in which individual users can access computers, databases and experimental facilities simply and transparently, without having to consider where those facilities are located.

#### IV. REQUIREMENT OF CLOUD BASED APPLICATIONS

For the implementation of a new cloud based application which need to better security and productivity than the exiting application for which the new one has been designed with. Again it must ensure the QoS and a optimal system throughput. The new application may have high innovative service say Numerical Weather Forecasting, Oceanography [5] which provided to the end user or customer. The companies that were able to implement grid computing technology, achieve better results .This was one of the reason which lead to the disappearance of small search engines .so here the end users or customers remain faithful to the few main companies which not only provide the text search services in their web pages but also able to provide various other accessory details such as image and video searching. For providing the better enhancement that is enhanced flash services 3D appearance and interactive capacity and all other better capabilities our proposal must be capable of providing the services required which must be given by our application. So we need to for a higher level web service previously we were using web 1.0 and currently we are using web 2.0. Here we are providing an comparative study of both in order to generate the basic requirement for the new generation web application web 3.0.

#### V. EXISTING WEB SERVICES

A web service is a programmable component that provides a service and is accessible over the Internet. "Web services" is an effort to build a distributed computing platform for the Web. Some existing web services are SOAP [5], WSDL [6], WSIL [5], and UDDI [6]. Web-based applications that dynamically interact

with other Web applications using open standards that include XML, UDDI and SOAP.

A Service-Oriented Architecture (SOA) is a collection of services or software agents that communicate freely with each other. Sub-topic definition: Web Services protocols and standards are the technology that promotes the sharing and distribution of information and business data. A protocol is a standard method for transmitting data through a network. There are many different specialized protocols to accommodate the many kinds of data that might be transmitted [2] [3] [4].

#### A. web 1.0 and web 2.0

The some feature comparison of web 1.0 and web 2.0 as follows:

- 1) Mode of operation: First coming to the mode in which both they operate , where the web 1.0 uses only read mode but web 2.0 uses read ,write and contribute mode. That means here not only the end user is able to read but also can write of their own and also can contribute as a comment or suggestion [3].
- 2) Content Page: In case of web 1.0 the primary unit of content is page where as in case of web 2.0 the primary unit of content is either post or record the information.
- 3) State of Application In case of web 1.0 the state of the application is static where as in case of web 2.0 it is dynamic one[3].
- 4) Browser: For viewing an application based on web 1.0 a web browser is needed but the application based on web2.0 can be viewed through browser, RSS reader (read simple syndication) or anything which is suited for internet [3].
- 5) Architecture: Coming on to the architecture point of view the web 1.0 uses client server architecture where as web 2.0 uses web service based architecture.
- 6) Easy operation: For web 1.0 based application content are created by web coders where as the web 2.0 based applications are created by everyone.etc.

Many utilities may require cloud computing applications. It may needs high speed computing and large storage .These are the many services were defined as a hybrid model of exploiting the recourses provided by computer network .it has both computational and sociological implications. In the computational terms these cloud services are described as a subset of grid computing concerned with the use of special shared computing recourses .For which it has been classified as a hybrid model exploiting computer network mainly internet.

#### B. Web 3.0

In order to avail the facilities of the web 3.0 services to specific application of cloud it must be capable of performing high performance calculations and provide stimulated systems.

Web 3.0 technologies (semantic web) include:

- 1) Artificial intelligence
- 2) Automated reasoning
- 3) Congestive architecture
- 4) Composite application
- 5) Distributed computing
- 6) Knowledge representation
- 7) Ontology(computer science)

- 8) Recombinant text
- 9) Scalable vector graphics
- 10) Semantic web
- 11) Semantic wiki
- 12) Software agent

In order to introduce the advance services of web 3.0 such as a fast broadband connection to the internet, always and everywhere. We first must understand what is the advancement we will get from the implication of web 3.0 in the cloud based application, considering an example, suppose someone is collecting stamp of variety types After sometime a huge amount of stamps are been gathered .Now from the large amount of stamps suppose it is need to search for a specific one. Then what are the possible ways for searching it? Possibly, First, search may by its name, which technique is been used in case of web1.0. Second, may search for it by its color say blue, which technique is been used in case of web 2.0. Finally, search for it by its structure which can be possible in case of web 3.0.

Describing the data in a structured way can be best possible using database. Now via using web 3.0 not only the description of data done by database but also different databases can be connected.

Considering another analogy with the databases such as database with stamps, database with different county names, database with different colors, and database with different traders. In this context, web 3.0 have the provision for creates a big collection of databases, may be connected on demand. Now, its can be the arguments that made for the structure of data and the way the data is described.

Linking data is the power of web3.0. So we can well define that web 3.0 uses open source technique and free data, where the data are used as services. By using this advancement into our cloud services , the power of cloud computing increased by enabling the open identities and provide us software as a service(SaaS).for example Google docs.

With the internet dominating the business world, the need to have an effective web 3.0 sites has increased among companies, in today's always on world a company's web site is critical to its ability to compete and succeed [9]. Our top priority is to provide high quality updates on web 2.0 and 3.0 solution around the world. Web 3.0 is defined as the creation of high quality content and services produced by individuals using web 2.0 technologies as an enabling platform.

## VI. CONCLUSION

The aim of this to show several types (and levels) of interoperability of applications provided by cloud computing; although driven by proof-of-capability experiments and results therein, there are deeper questions that motivate this work and define the research methodology for redefining the services capabilities Thus, on the one hand, there is a need to provide a range of applications on developer's disposal. On the other hand, in order to build empirical models or validate existing predictions of performance, it is important to establish and experiment with programming models

How to understand and use these platforms is a big issue.

Choice of appropriate web services is an important consideration while we are using cloud computing. It introduces significant concerns about data integrity, intellectual property management, audit trails, and other issues have been identified in this work and future directions have been proposed so that advantages of the Cloud can be unleashed.

In this paper, we not also described the definition, styles and characters of cloud computing, but also investigate what benefits the different web services give and bring to the foundation for cloud computing. We also took an example, summed up key techniques, and then cloud computing web services were illustrated and compared.

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