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Short Communication

Cloud Computing and Demand Based Services at a glance: Contemporary Scenario

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Abstract: Cloud Computing is one of the important name in the field of Computer and Information Science. Cloud Computing is actually need of the hour. Cloud Computing is an important platform which is deals with virtualization. This is a platform or more clearly an architecture which supports virtualization. And virtualization is including hardware, software, packages, utilities and applications that means whole IT infrastructure. Cloud Computing and its evolvement introduced so many facilities and services out of which demand based services treated as most important in many perspective. This paper is deals with several aspects of cloud computing; including so many demand based services for creation of healthy and sophisticated information infrastructure powered by advance technologies. Several facets reported in this paper as per the R&D undertaken in ISOAH Data Securities Pvt. Ltd and also will be incorporated in the doctoral thesis of the main researcher.

Keywords: Computing, Cloud Computing, Information Technology, Information Technology applications, Information Science and Technology [IST], Information Infrastructure, Virtualization, Demand Based Services.

Introduction

'Cloud Computing' is an advance computing and Information Technology Architecture which is mainly deals with Virtualization Technology. It is actually larger than virtualization and even Grid Computing, Utility Computing and similar platform. Virtually 'Cloud Computing' is combination of all these systems [1], [8]. Practically, 'Cloud Services' today are delivered in a user friendly way and with several scales. There are several reasons for which 'Cloud Computing' is emerged and evolved in today's shape. Wonderful and massive web scale infrastructure, any where and any time systems availability, less and even no hardware or software installation from in house perspective, pay-as-you-go are the main aim for increasing popularity and uses of Cloud Computing [3], [4]. Practically 'Cloud Computing' is a demand service many ways; here companies may chose cloud service on various parameter and requirement- both current and future. 'Cloud Computing' is today a full of happiness in the field of IT infrastructure [2], [9].

Objectives

The main aim of this study is includes:-

- To learn basic about 'Cloud Computing' and its characteristics.
- To find out main advantages of 'Cloud Computing' and its increasing periphery.
- To learn about Demand Based Computing Services or about 'On Demand Computing' platform.
- To learn about basic user's services rendered by cloud computing.
- To find out main challenges and threats for cloud computing and computing on demand.

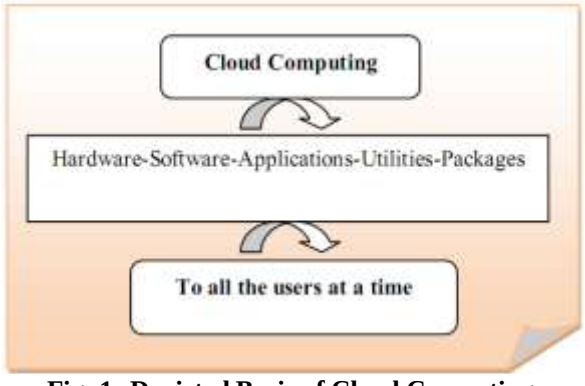

Fig: 1:-Depicted Basic of Cloud Computing

'Cloud Computing' and Facilities:

'Cloud Computing' is a kind of online and internet based Information Technology Infrastructure service

which provides computing facilities to the door step of the client. Yes through 'Cloud Computing', now it is possible to offer hardware, software, applications, database, and utilities to the companies or user through the dedicated network; round o clock facilities. 'Cloud Computing' mistakenly consider as virtualization but practically it is more than that, it is actually combination of utility computing, Grid Computing, Virtualization and other related tools and technologies. Practically 'Cloud Computing' companies many ways allows user several task through the dedicated line at any where and time, it also provide higher and improved quality of services and indirectly helps in new service development and design [5], [10].

Apart from these, 'Cloud Computing' provides following services to its client or users through its dedicated network:-

- Pay-for-what-you and similar type of facilities to the client.
- No heavy hardware and equipments in companies in inside.
- Round o Clock service, through broadband service.
- No long term commitments.
- Allows Dynamic Allocation.
- Make eco friendly Computing; as it uses less computing devices.
- Rapidly deploy applications over the internet.
- Reducing risk and centralize maintenance from each and every type of organization [8], [9].

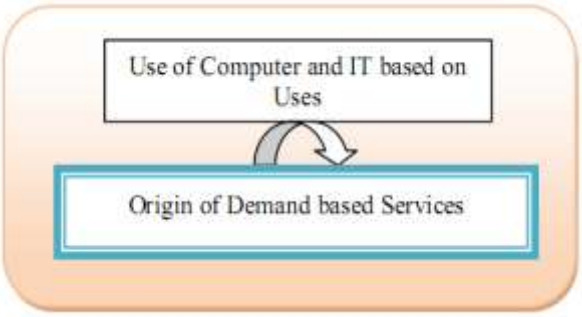

Fig: 2- Depicted meaning of Demand based services

Demand Based Computing: Basic and Need:

Demand based Computing or Computing on Demand is one of the important terms in today's Computer and Business world [9], [19-21]. Today we are living in Information age and Digital world; where super Computing are also there; thus there is a tremendous need Computing on Demand. The main principles of Demand Based Computing are use of Computer and IT infrastructure depending upon need [6-7]. Here consumer or companies basically get service from the centralized service provider. And it also allow user to choose any kind of services; that any organization demand any particular service. That is also offer depending upon need and pay. Some of the benefits of Computing on Demand are as follows:-

- Here user can scale up or down depending upon then requirement of services.
- Here user may gain benefit from not incurring the disruption to move to a larger machine.
- Depending upon requirement, workload may be move from one server to another.
- It promote mobile computing; by using work mobility multiple services with multiple servers are easily possible.
- When users no need to use services or facility then they no need to pay any charge.
- As the service provided by the centralized unit thus it reduces number of physical infrastructure; many ways.
- Depending upon need or urgent requirement virtual machine may be created.
- The computing on Demand model if based on cloud computing; then it may be use strategy of Pay-as-You-Go and pay for What-You-Use [12], [13].

'Cloud Computing' and Demand based Services:

Demand Based Computing is obviously support by today's 'Cloud Computing' agencies. Here one user can get computing and IT infrastructure depending upon need and they need to pay for when they are using the services. 'Cloud Computing' is also comes with several services and facilities; it is essential to chose the service by the user and need to pay only for concerned service. Thus, the demand based computing [i.e. cloud computing] helps small organization many way to meet the global trends and helps in their business and activities. 'Cloud Computing' with demand may depend on various strategy and platform. Like low and servers, on demand platform, dynamic capacity platform [9], [14], [15].

In low end servers, Cloud Computing deals with the characteristics are like:-

- Higher administration cost due to management of maximum number of physical servers.
- It need longer lead time for server deployment.
- Unable to sharing information, technologies and resources between the applications.
- Down time is actually essential foe adding new hardware.
- When an application not fully utilize that time wastage of unused processing cycles is very much essential [10], [12].

Where as In Demand Based Platform, the characteristics are manly as follows:-

- Lower administration cost is needed for minimum server and equipment management.
- Actual and enhance time to market any kind of new product or services to the users.
- Able to share various recourses, memory, I/O, CPU between the users.

- In on demand platform Down Time is not required for installing new hardware and equipment in many cases.
- In this platform it is possible to take advantages of unused CPU/Memory if dynamic [9], [16].

Where as In Dynamic Capacity Platform, the characteristics are manly as follows:-

- Lower administration is required due to less physical and logical server management [2], [17].
- Available time is there, to launch any new product or services.
- It is able in sharing input/output system and even full CPU and memory between the applications.
- Due to fully configured machine, no down time in generally required.
- It is makes able to take benefit of run unused processing cycle of other application.

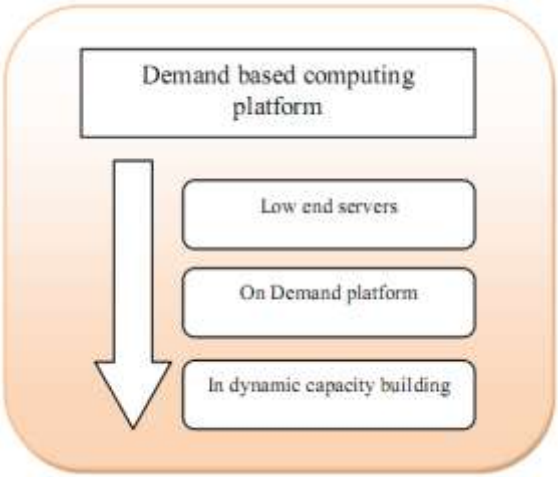

Fig: 3- Showing some demand based computing platform

Findings

- 'Cloud Computing' is one of the important virtualization makes IT infrastructure including hardware, software and application packages.
- 'Cloud Computing' may be public or private or hybrid in nature depending upon requirement.
- 'Cloud Computing' is a valuable on-demand IT and service available in centralized manner.
- 'Cloud Computing' as a demand computing is various types, like low end server, on demand server, dynamic capacity building.

Suggestion

- 'Cloud Computing' service may be chosen depending upon requirement as far as Information dealing organization is concerned.
- Public Organization need to take cloud computing and may be pay depending upon service they used.

Conclusion

Cloud Computing is a friendly tool for today's IT Professionals and even to business professionals. The Business and its development many ways responsible for computing practice, practically Cloud Computing rejuvenate and empowering business of all types. Virtually the cloud computing promotes, on demand computing thus, depending upon need the business firm may choose the service and even particular service which is they required. Thus Cloud Computing not only promoting social development through information infrastructure building; but also helps economical development through the business computing and e-commerce applications.

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