

CURRENT SCENARIO IN ARCHITECT AND APPLICATIONS OF CLOUD

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ABSTRACT:

In present paper, the review regarding the cloud, architecture and and some of the applications. Some of the architecture has been illustrated. The cloud computing becoming the most powerful phenomena in vast areas like, the small businesses, mobile networking and also in the scientific research areas.

Keyword: Cloud, architecture, small businesses, research.

INTRODUCTION

Cloud computing is quickly becoming one of the most popular and trendy phrases being tossed around in today's technology world. "It's becoming the phrase du jour", says Gartner's Ben Pring [1]. It is the big new idea that will supposedly reshape the information technology (IT) services landscape. According to The Economist in a 2008 article, it will have huge impacts on the information technology industry, and also profoundly change the way people use computers [2].

Cloud computing, a framework for enabling convenient, and on demand network access to a shared pool of computing resources [4], is

emerging as a new paradigm of large-scale distributed computing [3]. It has widely been adopted by the industry, though there are many existing issues like Load Balancing, Virtual Machine Migration, Server Consolidation, Energy Management, etc. that are not fully addressed [5].

Cloud computing is in many ways a conglomerate of several different computing technologies and concepts like grid computing, virtualization, autonomic computing [6], Serviceoriented Architecture (SOA) [9], peer-to-peer (P2P) computing [8], and ubiquitous computing [7].

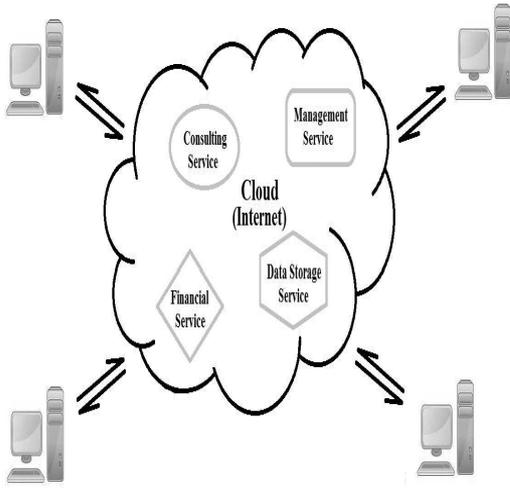


Figure 1. Cloud computing [10].

Cloud computing is the delivery of computing services over the Internet, and it offers many potential benefits to small and medium-sized enterprises (SMEs). For example, implementing information technology solutions and platforms can be complex and costly for SMEs. Cloud computing can often help ease this burden by enabling SMEs to access services that they might not have the money or resources to implement or support on their own. Many organizations may employ cloud computing solutions as part of their overall business strategy, allowing them to focus on their core business.[11]

Cloud services are typically made available via a private cloud, community cloud, public cloud or hybrid cloud. Generally speaking, services provided by a public cloud are offered over the Internet and are owned and operated by a cloud provider. Some examples include services aimed at the general public, such as online photo storage

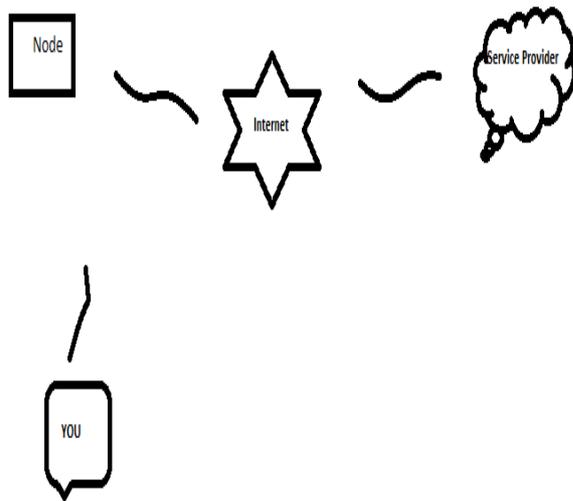
services, e-mail services, or social networking sites. However, services for enterprises can also be offered in a public cloud. In a private cloud, the cloud infrastructure is operated solely for a specific organization, and is managed by the organization or a third party.

In a community cloud, the service is shared by several organizations and made available only to those groups. The infrastructure may be owned and operated by the organizations or by a cloud service provider. A hybrid cloud is a combination of different methods of resource pooling (for example, combining public and community clouds).

PARAVIRTUALIZATION:

Paravirtualization is an enhancement of virtualization technology in which a guest OS is recompiled prior to installation inside a virtual machine. Paravirtualization allows for an interface to the virtual machine that can differ somewhat from that of the underlying hardware. This capacity minimizes overhead and optimizes system performance by supporting the use of virtual machines that would be underutilized in conventional or full virtualization. The main limitation of paravirtualization is the fact that the guest OS must be tailored specifically to run on top of the virtual machine monitor (VMM), the host program that allows a single computer to support multiple, identical execution environments. However, paravirtualization eliminates the

need for the virtual machine to trap privileged instructions. Trapping, a means of handling unexpected or unallowable conditions, can be time-consuming and can adversely impact performance in systems that employ full virtualization.[12]



ARCHITECTURE OF CLOUD COMPUTING

There are following two key enabling technologies could play very important roles in this revolutionary phase:

- a. Virtualization technology
- b. Service-Oriented Architecture (SOA).

The virtualization technology handles how images of the operating systems, middleware, and applications are pro-created and allocated to the right physical machines or a slice of a server stack. The SOA is the evolution of a system or software architecture for addressing componentization, reusability, extensibility, and flexibility.

SEVEN PRINCIPLES

1. INTEGRATED ECOSYSTEM MANAGEMENT FOR CLOUD
2. VIRTUALIZATION FOR CLOUD INFRASTRUCTURE
3. SERVICE-ORIENTATION FOR COMMON
4. EXTENSIBLE PROVISIONING AND SUBSCRIPTION FOR CLOUD
5. CONFIGURABLE ENABLEMENT FOR CLOUD OFFERINGS
6. UNIFIED INFORMATION REPRESENTATION AND EXCHANGE FRAMEWORK
7. CLOUD QUALITY AND GOVERNANCE [13]

APPLICATIONS OF CLOUD COMPUTING

For small businesses, barriers to enter markets that require significant amounts of computing power are substantially lowered. This means that small companies have newly found access to computing power that they otherwise would never have been able to acquire. Because computing power costs are calculated based on usage, small businesses do not have to take on the unnecessary risk associated with committing a large amount of capital to purchasing network infrastructure. The ability of a company to grow or shrink the size of its workforce based on business demand without having to scale its network infrastructure capacity accordingly is another benefit of on-demand pricing and supply of computing power [14].

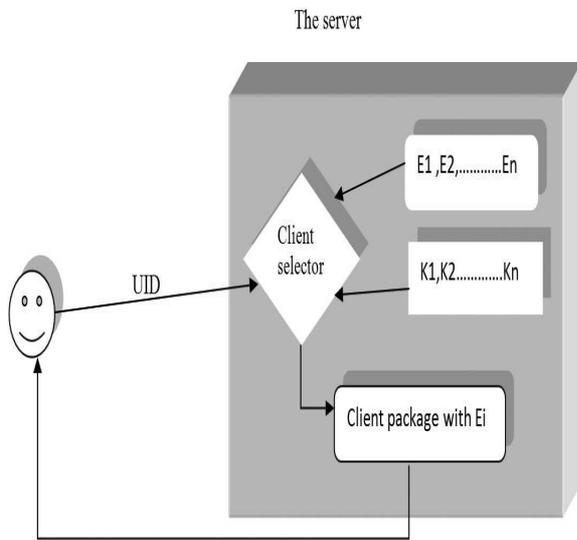


Figure 6. The client sending the UID to the server [15].

MOBILE CLOUD COMPUTING

Similar with Cloud Computing, there are a lot but no consensual definitions on what mobile cloud computing is. In this paper, we consider it is a novel computing mode consisting of mobile computing and cloud computing, which provide cloud based services to users through the Internet and mobile devices. On one hand, the mobile cloud computing is a development of mobile computing, and an extension to cloud computing. In mobile cloud computing, the previous mobile device-based intensive computing, data storage and mass information processing have been transferred to 'cloud' and thus the requirements of mobile devices in computing capability and resources have been reduced, so the developing, running, deploying and using mode of mobile applications have been totally changed. On the other hand, the terminals which people used to access and acquire cloud services are suitable for

mobile devices like smartphone, PDA, Tablet, and iPad but not restricted to fixed devices (such as PC), which reflects the advantages and original intention of cloud computing. Therefore, from both aspects of mobile computing and cloud computing, the mobile cloud computing is a combination of the two technologies, a development of distributed, grid and centralized algorithms, and have broad prospects for application.[16]

CLOUD COMPUTING FOR SMALL- AND MEDIUM-SIZED ENTERPRISES

Cloud computing is the delivery of computing services over the Internet, and having potential benefits to small and medium-sized enterprises (SMEs). For example, implementing information technology solutions and platforms can be complex and costly for SMEs.

CLOUD COMPUTING FOR RESEARCH

The research in the cloud computing is ever increasing from last decade with the high advancement in technological perspective. The research in case of computing and advancement in cloud decision from server to client.

CONCLUSION:

In this review paper, we have discussed the current scenario of cloud computing, the architecture of cloud and the applications of the cloud computing.

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