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CLOUD COMPUTING TECHNOLOGY

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Abstract:

The existing concept of virtualization provides increased system utilization via virtual infrastructure and promotes resource sharing across an organization Cloud computing is a recently evolved computing terminology or metaphor based on utility and consumption of computing resources. Cloud computing involves deploying groups of remote servers and software networks that allow centralized data storage and online access to computer services or resources.. For example, a cloud computer facility that serves European users during European business hours with a specific application

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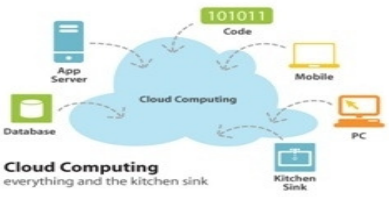
INTRODUCTION:

Cloud Computing is the internet-based storage for files, applications, and infrastructure. One could say cloud computing has been around for many years, but now a company may buy or rent space for their daily operations. The cost savings in implementing a cloud system is substantial, and the pricing for use of cloud computing can easily be scaled up or down as determined by necessity.



Service models

Cloud computing providers offer their services according to three fundamental models: infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) where IaaS is the most basic and each higher model abstracts from the details of the lower models. In 2012 network as a service (NaaS) and communication as a service (CaaS) were officially included by ITU (International Telecommunication Union) as part of the basic cloud computing models, recognized service categories of a telecommunication-centric cloud ecosystem.

Infrastructure as a service (IaaS)

In the most basic cloud-service model, providers of IaaS offer computers - physical or (more often) virtual machines - and other resources. To deploy their applications, cloud users install operating-system images and their application software on the cloud infrastructure. In this model, the cloud user patches and maintains the operating systems and the application software. Cloud providers typically bill IaaS services on a utility computing basis [*citation needed*]: cost reflects the amount of resources allocated and consumed.

Platform as a service (PaaS)

(PaaS) is a category of cloud computing services that provides a platform allowing customers to develop, run and manage Web applications without the complexity of building and maintaining the infrastructure typically associated with developing and launching an app. PaaS can be delivered in two ways: as a public cloud service from a provider, where the consumer controls software deployment and configuration settings, and the provider provides the networks, servers, storage and other services to host the consumer's application; or as software installed in private data centers or public infrastructure as a service and managed by internal IT departments.

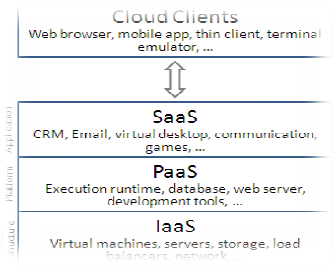
Software as a service (SaaS)

SaaS) has brought a huge difference in the ways in which business is done today. As we know, Cloud Computing is a service through which you can avail shared resources, software and information on

your computer or other devices via the Internet. This means that you can access the information you want any time, expense your claims on the go, save time on tedious reporting, claims settlement and much more.

Network as a service (NaaS)

Network as a Service (NaaS) is sometimes listed as a separate Cloud provider along with Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). This factors out networking, firewalls, related security, etc. from IaaS as is shown in the figure below.



Deployment models:

Private cloud

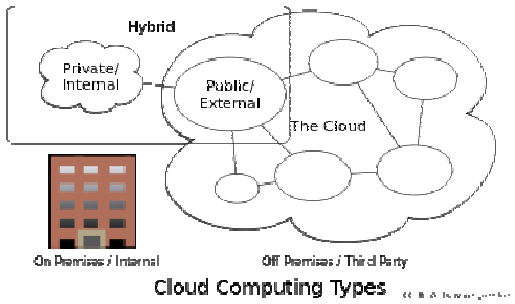
Private cloud is cloud infrastructure operated solely for a single organization, whether managed internally or by a third-party, and hosted either internally or externally. Undertaking a private cloud project requires a significant level and degree of engagement to virtualize the business environment, and requires the organization to revaluate decisions about existing resources. When done right, it can improve business, but every step in the project raises security issues that must be addressed to prevent serious vulnerabilities**.**

Community cloud

Community cloud shares infrastructure between several organizations from a specific community with common concerns (security, compliance, jurisdiction, etc.), whether managed internally or by a third-party and hosted internally or externally. The costs are spread over fewer users than a public cloud (but more than a private cloud), so only some of the cost savings potential of cloud computing are realized.

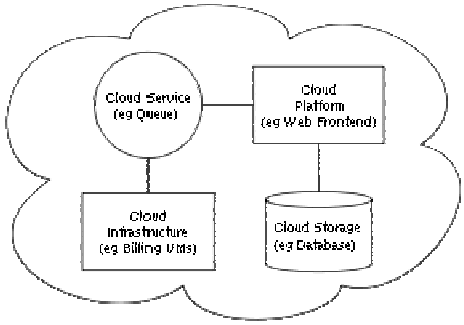
Hybrid cloud:

Hybrid cloud is a composition of two or more clouds (private, community or public) that remain distinct entities but are bound together, offering the benefits of multiple deployment models. Hybrid cloud can also mean the ability to connect collocation, managed and/or dedicated services with cloud resources. For example, an organization may store sensitive client data in house on a private cloud application, but interconnect that application to a business intelligence application provided on a public cloud as a software service.[70] This example of hybrid cloud extends the capabilities of the enterprise to deliver a specific business service through the addition of externally available public cloud services



Architecture:

Cloud architecture, the systems architecture of the software systems involved in the delivery of cloud computing, typically involves multiple *cloud components* communicating with each other over a loose coupling mechanism such as a messaging queue. Elastic provision implies intelligence in the use of tight or loose coupling as applied to mechanisms such as these and others.



The Intercloud

The Intercloud is an interconnected global "cloud of clouds" and an extension of the Internet "network of networks" on which it is based. The focus is on direct interoperability between public cloud service providers, more so than between providers and consumers cloud

Engineering

Cloud engineering is the application of engineering disciplines to cloud computing. It brings a systematic approach to the high-level concerns of commercialization, standardisation, and governance in conceiving, developing, operating and maintaining cloud computing systems. It is a multidisciplinary method encompassing contributions from diverse areas such as systems, software, web, performance, information, security, platform, risk, and quality engineering.

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Figure 1, "the cloud indicated at 49 in Fig. 1.", US Patent [13]5,790,548, column 5 line 56–57, filed April 18, 1996

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