Chapter 1
Utility Computing and Its Utilization

Mainak Adhikari
IMPS College of Engineering and Technology, India

Aditi Das
IMPS College of Engineering and Technology, India

Akash Mukherjee
IMPS College of Engineering and Technology, India

ABSTRACT

Utility computing is envisioned to be the next generation of Information Technology (IT) evolution that depicts how computing needs of users can be fulfilled in the future IT industry. Its analogy is derived from the real world where service providers maintain and supply utility services, such as electrical power, gas, and water to consumers. Consumers' providers the services based on their usage. Therefore, the underlying design of utility computing is based on a service provisioning model, where Consumers pay providers for using computing power only when they need to. This chapter first discuss some features, challenges and impacts of utility computing. Finally this chapter point out the important, standards and recommendation of utility computing in cloud platform with a suitable example.

INTRODUCTION

Now a day's technical development lead to increase the popularity of internet high speed network with low cost commodity component changing the way of computing. The chief scientist of original advance research project agency network (OARPAN) seeded the internet in 1969 said that "as of now computer network are still in their infancy, we will probably see the spread of 'computer utility' which like, present telephone and electric utilities, will service individual homes and offices across the country". Like cluster computing is the result of the technical development. it is a single unified computing resources. Cluster computing are of various type high performance cluster, high availability cluster, dedicated cluster, non-dedicated cluster and so on . geologically distributed resources such a storage device, data

sources, super computer are inter connected and exploited by the user around the world as single, unified resource. The network based on system network architecture (SNA) created by IBN, in 1924 have enabled all the public and private network in large scale .which was replaced by more efficient and less complex protocol, TCB/IP. Broadband network extend the distributed computing which has improved the client server relationship. (da Rosa Righi et al., 2009)

In business world the "DATA CENTERS", which is based on the cluster architecture has encourage the world to outsource there computing needs. Human mentality want speed in their computing life and utility computing fulfil all those needs. This report mainly says about the grid and cloud computing, there application and its potential impact.

CLOUD COMPUTING

Overview

Cloud Computing means computing as utility where computing like hardware, software and platform. It is based on "Pay as you go" basis model. In this model the entire workload is shifted to cloud, so that the local computers are not burdened with running hundreds of applications. All that the user requirement is a system interface software, like a simple web-browser or internet to run on their side to perform efficiently. It provides users, to start their business without purchasing any hardware. Cloud providers give their resources on lease and make their profits. (Birman et al., 2009)

History of Cloud Computing

Past decade came through an exponential growth in utility computing .With the regard of the computing power utility means "pay and use". Utility computing is not a new concept, it has a long history.

John McCarty said "if the computer have advocated becomes the computer of the future, then computing may someday be organised as a public utility just as the telephone system is the public utility.... the computer utility can become basis of the new and important industry.

IBM and other companies conduct all this utilities for following last two decades as time sharing, offering computing power and data base storage to banks from worldwide centres. INTEL and AMD filled the idea of using several of servers in DATA CENTER by increasing the computational power.

In 1997, HP equipments - InsynQ, Inc. launched application and desktop having services. In 1998 Bells lab scientists was assigned by the HP to begin work in computing power plant, providing multiple

Table 1.

New Computing Types	New Service	New Features
1. Cloud computing 2. Edge computing 3. Grid computing 4. Utility computing	1. Software as a Service (SAS) 2. Infrastructure as a Service (IAS) 3. Platform as a Service (PAS) 4. Service Oriented Architecture (SOA)	1. Ubiquitous access 2. Readability 3. Scalability 4. Virtualisation 5. Exchangeability 6. Cast effectiveness

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