Chapter 2. Literature Review

(1)
Cloud Computing: An Overview

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Cloud computing is a kind of computing technique where IT services are provided by massive low-cost computing units connected by IP networks. Cloud computing is rooted in search engine platform design. There are 5 major technical characteristics of cloud computing:
(1) large scale computing resources (2) high scalability & elastic (3)shared resource pool (virtualized and physical resource) (4)dynamic resource scheduling and (5) general purpose.

In order to support the maximum number of user and elastic service with the minimum resource, the Internet service provider invented the cloud computing. within a few years, emerging cloud computing has became the hottest technology. From the publication of core papers by Google since 2003 to the commercialization of Amazon EC2 in 2006, and to the service offering of AT&T Synaptic Hosting, the cloud computing has been evolved from internal IT system to public service, from cost-saving tools to revenue generator, and from ISP to telecom. This paper introduces the concept, history, pros and cons of cloud computing as well as the value chain and standardization effort.

(2)

Secure Data Access in Cloud Computing

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Data security and access control is one of the most challenging ongoing research work in cloud computing, because of users outsourcing their sensitive data to cloud providers. Existing solutions that use pure cryptographic techniques to mitigate these security and access control problems suffer from heavy computational overhead on the data owner as well as the cloud service provider for key distribution and management. This paper addresses this challenging open problem using capability based access control technique that ensures only valid users will access the outsourced data. This work also proposes a modified Diffie-Hellman key exchange protocol between cloud service provider and the user for secretly sharing a symmetric key for secure data access that alleviates the problem of key distribution and management at cloud service provider. The simulation run and analysis shows that the proposed approach is highly efficient and secure under existing security models.

(3)

Cloud Computing for Emerging Mobile Cloud Apps

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The concepts behind cloud computing systems, cloud software architecture, the need for mobile cloud computing as an aspect of the app industry to deal with new mobile app design, network apps, app designing tools, and the motivation for migrating apps to cloud computing systems. The tutorial will review facts, goals and common architectures of mobile cloud computing systems, as well as introduce general mobile cloud services for app developers and marketers. This tutorial will highlight some of the major challenges and costs, and the role of mobile cloud computing architecture in the field of app design, as well as how the app-design industry has an opportunity to migrate to cloud computing systems with low investment. The tutorial will review privacy and security issues. It will describe major mobile cloud vendor services to illustrate how mobile cloud vendors can improve mobile app businesses. We will consider major cloud vendors, such as Microsoft Windows Azure, Amazon AWS and Google Cloud Platform. Finally, the tutorial will survey some of the cutting edge practices in the field, and present some opportunities for future development.

(4)

Cloud Computing Based Learning Web Application Through Amazon Web Service

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In this Web Application, we are going to deploy a Dynamic E-Learning Portal using WordPress through Amazon Web Services (AWS). The project mainly consists of 10 Amazon Cloud Services and Google Firebase. The main aim of this project is to provide E-Learning Courses for Engineering Students. Technologies used—Amazon RDS, Amazon SNS, Amazon Route53, Amazon S3, Amazon VPS, Amazon LightSail, Amazon Transfer Family, IAM (Identity Access Management), WordPress and Firebase by Google.

Cloud computing is a term referred to storing and accessing data over the internet globally. It does not store any data on the hard disk of your personal computer in this data centers used as storing purpose. In cloud computing, you can acess data from a remote server which is easier for retrieving the data. Cloud computing is a popular option for people and businesses for several reasons including cost savings, increased productivity, speed and efficiency, performance, reliability, and security.

Amazon Web Services (AWS) is the most often used, extensive also globally adopted and used cloud platform, offering many fully featured services from data[28] centers globally and locally like Amazon Services. Numerous customers and users including startups, biggest enterprises, and other governments are using AWS to lower costs, to increase computation speed, and to the fact that AWS is a reliable service.

(5)

Cloud Computing Hosting

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Cloud Computing is a paradigm in which data, applications or software are accessed over a network. This network of servers is called as "Cloud". Using a client such as desktops, entertainment centers, tablet computers, notebooks, wall computers, handhelds etc, users can reach into the cloud for resources as they need them. Cloud computing is ondemand access to virtualized IT resources that are housedoutside of your own data center, shared by others, simple to use, paid for via subscription, and accessed over the Web. The main work in this project is to host Permit System as an application in the GoGrid cloud to analyze cloud services and architecture. Cloud Computing architecture and cloud services are analyzed and implemented in this project. GoGrid is used to host a Permit System that allows users to submit building permit application through internet for providing inspection and certification services