

Chapter 1

A Systematic Study of Services and Security Model in Cloud Computing: A Brief Overview

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ABSTRACT

Cloud computing is a technical model with on-demand network access, delivering various types of services, providing resources such as memory storage, applications, networking, databases, servers, etc. All these resources always keep with us but with one condition: “the internet.” The major purpose of this chapter is to know the security and services requirements and their solutions in a cloud computing environment. This rigorous research extensively explores the complex relationship between service delivery and security. It also looks at the issues and potential fixes for providing services that are trustworthy, efficient, and safe. Because of the accelerated pace of technological advancement, the networked nature of systems, and the rising reliance on internet services, the potential of threats and vulnerabilities has increased significantly. After that, the authors focus on what types of services are given in the cloud where each type of service provides different options like efficiency, accessibility, savings, flexibility, opportunity, innovation, and many more.

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1. INTRODUCTION

The Term Cloud means a virtual memory space on the Internet. Cloud Computing is a technology model that uses services of servers for Storing, Managing and Accessing Data over the internet. Documents, E-mails, Chats, Videos, Blogs, Training Spreadsheets, Pictures, Address Books, Contact No, Presentations etc. All these are present in the cloud and we can access them through any device like mobiles, laptops, tablets, and desktops (Li et al., 2012).

Based on extensive research and corroborating sources, cloud computing is poised to become one of the leading technologies in the upcoming years. Prominent industry players like Sun Microsystems, Google, IBM, Amazon, and Microsoft have undertaken the establishment of new data centers in various global locations. This strategic expansion aims to ensure redundancy, fault tolerance, and consistent availability of cloud computing services, mitigating the risks of website outages or failures.

The greatest option nowadays for individuals searching for quick implementation methods is the cloud. Cloud computing involves the dissemination of applications, including both hardware and software components, across virtual data centres via the Internet. It represents a flexible, parallel, distributed, virtual, and configurable system that offers versatility and scalability. Customers can customise cloud computing services, and they pay for resources and services according to how much they use them (Dudiki et al., 2022).

Here, we explained the whole overviews of the paper that there is not only three main cloud services there are so many services that are available for cloud computing and also there features which would be helpful for user to understand it and also we collected all the information about the cloud security, their importance and problem arised due to cloud.

The structure of the paper is as follows: Section 2 provides an overview of the background of cloud computing. Section 3 contains a survey of year-wise data on the cloud The paper describes the primary cloud service models in section 4. A brief introduction to cloud security is covered in section 5. The importance of cloud security is discussed in Section 5.1. The issues with cloud security are covered in Section 6.

2. BACKGROUND

2.1 Characteristics of Cloud Computing

Here are alternative descriptions of the characteristics of Cloud Computing (see Figure 1):

1. **On-demand self-services:** It means we access any email, chats, and messages from anywhere but we have a valid user id and password and also the Internet (N et al., 2022).
2. **Broad network access:** Here we can access cloud servers from any device whether it is a mobile, tablet, or laptop.
3. **Resource pooling:** The numerous IT resources that are shared and sporadically utilised by the various applications include networks, servers, storage, apps, and services.
4. **Rapid elasticity:** IT resources had to be adaptable enough to scale quickly as needed to supply computing services. Every time the service provider needed something, they gave it to him.

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