

Cloud, Edge, and Fog Computing and Security for the Internet of Things

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Abstract

In this paper, a method is purposed that detects the masquerade activity of cloud data. In this method, the combination of the decoy technique and the user's behaviour profile technique are used to improve the security of data in the cloud. This research has the main focus on understanding the use of these computing paradigms with the internet of things. The security concerns and its possible solutions are described. Therefore, the comparative analysis is conducted, which elaborates on each paradigm in the internet of things. The future consent of cloud, edge, and fog computing is also directed, which gives the innovative vision for the data handling with the internet of things.

Keywords: Security for the internet of things (IoT), Cloud Computing, Edge computing, Fog computing with the internet of things (IoT).

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1. Introduction

The computing scenario is converting from Cloud computing towards the fog and edge computing. The computing technology is emerging with the internet of things in these days. This technology not only helps to improve the existing application but also used to innovate the new applications. The internet of things is prominent in the data communication system and various devices, which are leading to increasing the amount of data generation. Due to which the cloud attitude uses to store, process, retrieve the data. There is a beneficial process of data processing and storage provided by cloud computing, which provides the entire data -center instead of having a private data center for the clients for batch processing, web applications, and other information processes. It is the primary reason we consider that Cloud computing is more efficient, which helps to reduce the cost of

organizations for the storage data for sharing data. This technology minimizes the extra burden of specification and excessive processing of data for the organization. The devices which can connect with the cloud need to interact with the new network and primary requirement of network connectivity. The working principle of a computing network is the same; however, before sharing the data, the network ensures the connectivity of entire devices. It also ensures that every hop is connected. The network can share the information at one hop and share the information towards the multiple hops. The sensors send the data towards the central storage system and computing equipment known as the cloud. The task of collecting the information is more complicated than the execution; the process of execution is explained below (Devkar, et al. 2016).

