

Chapter 4

Fog Computing Application Deployment and Management

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ABSTRACT

Fog computing enhances cloud computing to be closer to the processes that act on IOT devices. Fogging was introduced to overcome the cloud computing paradigm which was not able to address some services, applications, and other limitations of cloud computing such as security aspects, bandwidth, and latency. Fog computing provides the direct correlation with the internet of things. IBM and CISCO are linking their concepts of internet of things with the help of fog computing. Application services are hosted on the network edge. It improves the efficiency and reduces the amount of data that is transferred to the cloud for analysis, storage, and processing. Developers write the fog application and deploy it to the access points. Several applications like smart cities, healthcare domain, pre-processing, and caching applications have to be deployed and managed properly.

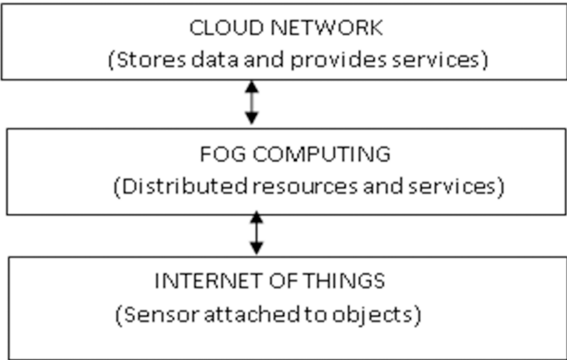
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INTRODUCTION

The fog computing enhances the cloud computing to be closer to the process that act on the IOT devices. It is also known as fogging. Fog computing is invented by CISCO. Fog computing provides services and storage to the client. Fog computing also provides the services between the cloud data centers and enterprise end devices. It is wireless information transferring across the distributed devices in the Internet of things (IOT) network. Fogging was introduced to overcome the cloud computing paradigm which was not able to address some services, applications and other limitations of cloud computing such as security aspects, bandwidth and latency. The protection mechanism which was used in cloud for encryption was failed in providing the security for the data from the attackers. Fog computing address these type of issues.

Fog computing applications are considered as the edge network computing. Edge network devices provide an entry point to the provider’s network. In fog computing communication takes place as peer to peer. In Internet of thing the sensor will generate extremely large amount of data. With the network connection the fog devices which are known as fog nodes can be deployed anywhere. It can be deployed on power pool, floor or the factory, vehicle, side of a railway track, etc. The fog nodes are routers, switches, controllers in industries, surveillance camera’s etc. This type of communication is used to provide storage and efficient sharing and to take the decisions. FC is a novel idea which is expected to solve problems and provides solution for the latency, sensitive information computing problems. The local computing resources are used by the fog computing instead of real cloud for processing data. The transmission latency is reduced because of the proximity between the processors and data sources.

Figure 1. Fog computing



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