

Survey Paper on Fog Computing

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ABSTRACT

In this paper, we studied about the fog computing. Fog computing is a paradigm that extends cloud computing and services to the edge of the networking similar to cloud. Fog provides data compute, storage and application services to end users.

Keywords : Fog computing, CISCO, advantages and disadvantages of fog computing, benefits of fog computing.

I. INTRODUCTION

Cloud computing refers to the ability to store data and retrieve it from off- side locations. It is a model in which data, processing and applications are concentrated in devices at the network edge. The term fog computing was introduced by the CISCO systems. Fog computing is also known as fogging or edge computing. CISCO recently delivered the vision of fog computing to enable applications on billions of connected devices to run directly at the network edge. Customer can develop, manage and run software applications on CISCO framework of network devices, including hardened routers and switches. Cisco brings the open source Linux and network operating system together in the single networked device. Fog computing is about computing on the edge. In fog computing devices communicate peer-to-peer to efficiently share or store data and take local decisions. Because of these new computing and communication paradigm these arises data security challenges. Even though existing techniques use security mechanism, data theft attacks prevention fails. To overcome this we can use decoy technology to store in cloud.

It works in the following manner

1. We monitor data access in the cloud and detect abnormal data access patterns. When unauthorized access is suspected and then verified using challenge questions.

2. We launch a disinformation attack by returning large amount of decoy information to the attacker. This protects against the misuse of the users real data.

II. LIMITATIONS OVER FROM CLOUD

1. Cloud computing has so many advantages, it also suffer from certain short comings too.
2. High capacity of bandwidth.
3. Client access link.
4. High latency.
5. Security.

III. LIMITATIONS OVERCOME IN FOG

1. Reduction in data movement across the network resulting in reduced congestion.
2. Elimination of bottle necks resulting from centralized computing systems.
3. Improved security of encrypted data as stays closer to the end user.

IV.EXISTING SYSTEM

Cloud computing has provided many opportunities for enterprises by offering their customers a range of computing services. Current “pay-as-you-go” cloud computing model becomes an efficient alternative to owning and managing private data centers for customers facing web applications.

V. PROPOSED SYSTEM

Unlike traditional data centers, fog devices are geographically distributed over heterogeneous platform, spanning multiple management domains. Cloud is interested in innovative proposals that facilitate service mobility across platforms, and technologies that preserve end user and content security and privacy across domain.

VI. BENEFITS OF FOG COMPUTING

1. GREATER BUSSINESS AGILITY- with the right tools, developers can quickly develop fog applications and deploy them where needed. Machine manufacture can offer MaaS to their customers. Fog application program the machine to operate in the way each customer needs.
2. BETTER SECURITY- protect your fog nodes using the same policy, controls and procedures you use in other parts of your IT environment. Use a same physical security and cyber security solutions.
3. DEEPER INSIGHTS, WITH PRIVACY CONTROL- analysis sensitive data locally instead of sending it to the cloud for analysis. Your IT team can monitor and control the devices that collect, analyze and store data.
4. LOWER OPERATING EXPENSE – conserve network bandwidth by processing selected data locally instead of sending it to the cloud of analysis.

ADVANTAGES

1. Fog can distinguished from cloud by its proximity to end-users.
2. The dense geographical distribution and its support for mobility.
3. It provides low latency, location awareness, and improves quality-of-services and real time applications.

DISADVANTAGES

1. Existing data protection mechanism such as encryption was failed in securing the data from the attackers.
2. It does not verify whether the user was authorized or not.
3. Cloud computing security does not focus on ways to secure the data from unauthorized access.

VII. CONCLUSION AND FUTURE SCOPE

Fog computing advantages for services in several domains, such as smart grid, wireless sensor network, internet of things and software define networks. We examine the state-of-the-art and disclose some general issues in fog computing including security, privacy, trust and service migration among fog devices and between fog and cloud. Future work will expand on the fog computing paradigm in smart grid. In this scenario, two models for fog devices can be developed. Independent fog devices consult directly with the cloud for periodic update on price and demands, while interconnected fog devices may consult each other. Next, fog computing based SDN in vehicular networks will receive due attentions.

VIII. REFERENCES

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