Fog Computing and Its Role in IOT

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Abstract— Cloud computing promises to change the way we use computer, mobile, access and store our personal and business information. The traditional data protection mechanisms such as encryption have failed in preventing data theft attacks. To overcome the security issue in existing system we propose Fog Computing which is different approach for securing the data in the cloud using offensive decoy technology. This technology protects against misuse of user real data. The fog computing is not replacement of cloud it is just extend the cloud computing by providing security in cloud environment. The main aim of fog computing is to place the data close to the end user.

Key words: IoT, Data theft attack

I. INTRODUCTION

Fog computing is nothing but the Edge computing which is the model in which data, processing and application are concentrated in device at the network edge rather than existing almost entirely in the cloud. The term "Fog Computing" was named as new model to ease wireless data transfer to distributed device in the Internet of Thing (IoT) network paradigm. In fog computing, device communicate peer to peer to efficiently share or store data and take local decision.

Fog computing providing security in cloud environment in greater extend to get the benefit of this technique a user need to registered with fog.

II. EXISTING SYSTEM

Existing system is nothing but the cloud computing. we have lot of stuffs means application, files, video, music etc. and we are constantly face a problem of space on your finite hard disk but with the cloud computing all our stuffs is store on world wide web server instead of the limited hard drive of our computer

Fig. 1:

Data protection mechanism such as encryption is failed in securing the data from the attackers. It does not verify whether the user was authorized or not. cloud computing failed to verify the real user and fake user. Cloud computing has given many opportunities for enterprises by offering their customer range of computing service. Cloud computing security does not focus on way of secure data from unauthorized access. Cloud computing devices are not geographically distributed over.

III. PROPOSED SYSTEM

We propose system to secure a user data in cloud using user behavior and decoy information technology called as fog computing. To provide security in cloud we use this system. The fog computing use different approach for securing data in cloud using the offensive decoy technology. the system monitors the data access in the cloud and detect the data access that are abnormal. In the proposed fog system when and unauthorized person try to access the data of real user it generates the fake information. this information or document is in the such manner that unauthorized person not able to identify that the data is fake or real. It is identified thought a questions which is entered by the real user at the time of filling sign up form. If the answer of question is wrong, then the user is not the real user. then system automatically provide a bogus information.

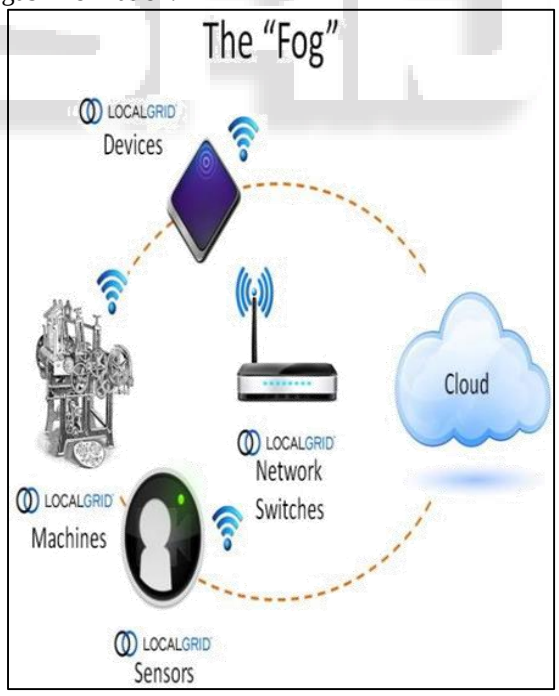

Fig. 2:

IV. SECURING CLOUD USING FOG

The main problem in cloud computing is maintain security for the authorized user data in way that guarantees only authorized or authenticated user and no one can gain access the real user data. We can secure cloud services by implementing additional security features.

A. *Decoy System:*

We use the different approach to securing data from fake users which is nothing but the nasty technology called as Decoy system. we use this technology to begin disinformation attacks against malicious insider

Preventing them from distinguishing the valid aware customer data from bogus useless

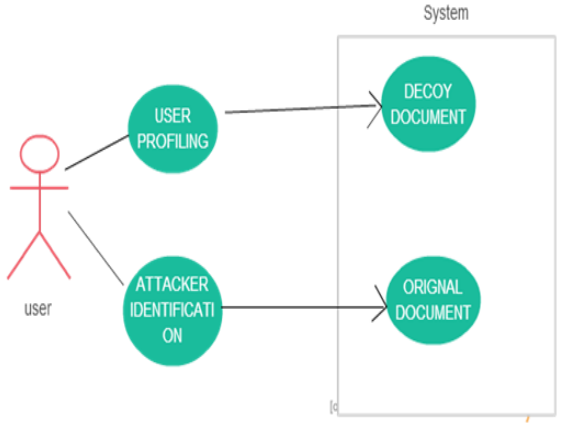

Fig. 3:

B. *Decoy System Advantages:*

The decoys then, serve two purpose

- when abnormal data access is detected its validating whether data access is authorized.
- Confusing the attacker or hacker with bogus information.

V. ADVANTAGES OF FOG COMPUTING

- We can have distinguished Fog from cloud by proximity to end users.
- The dense geographical distribution and its support to mobility.
- Fog provides low latency, location awareness and improve awareness.

VI. APPLICATIONS

A. *Connected Cars:*

Fog computing is ideal for Connected Vehicles (CV) because real-time interactions will make enable communications between cars and traffic lights as safe, efficient and fast as possible .

Fig. 4:

B. *Smart Traffic Signal:*

In smart cities fog computing is useful in smart traffic signal. suppose any accident happened on highway due to its lead to congestion traffic. then intelligent traffic camera informed the total scenario on fog that will noticed by traffic controlling system and information is transfer to city. This will reduce the time by changing the route to alternative way

Fig. 5:

VII. FUTURE SCOPE

In the future work, this security system as we have explained is applicable only for single cloud ownership system. If more than one owner has operated cloud then our security system will not be applicable for providing security, therefore in future enhancement we can improve our existing application to manage or control a cloud environment which has more than one cloud operator architecture.

VIII. CONCLUSION

In this Fog Computing position paper we presenting a new approach for solving the problem of insider data theft attacks in a cloud using dynamically generated decoy files and also saving storage required for maintaining decoys files in the cloud. we proposed the monitoring data access pattern by profiling user behavior.

REFERENCES

[1] Cloud Security Alliance, "Top Threat to Cloud Computing V1.0," March 2010. [Online]. Available: https://cloudsecurityalliance.org/topthreats/csathreats.v1.0.pdf

[2] F. Bonomi, "Connected vehicles, the internet of things, and fog com- putting," in The Eighth ACM International Workshop on Vehicular Inter- Networking (VANET), Las Vegas, USA, 2011.

[3] IJRET: International Journal of Research in Engineering and Technology eISSN: 2319-1163 | pISSN: 2321-7308: FOG COMPUTING: A NEW CONCEPT TO MINIMIZE THE ATTACKS AND TO PROVIDE SECURITY IN CLOUD COMPUTING ENVIRONMENT BY Sonali Khairnar and Dhanashree Borkar

[4] Prevention Of Malicious Insider In The Cloud Using Decoy Documents by S. Muqtyar Ahmed, P. Namratha, C. Nagesh

