

Document details

< Back to results | 1 of 1

Export Download Print E-mail Save to PDF Add to List More... >

[Full Text](#) View at Publisher

2018 15th Learning and Technology Conference, L and T 2018
29 May 2018, Pages 96-101
15th Learning and Technology Conference, L and T 2018; Effat UniversityJeddah; Saudi Arabia; 25 February
2018 through 28 February 2018; Category numberCFP18B33-ART; Code 136807

Security and privacy for IoT and fog computing paradigm (Conference Paper)

Rauf, A.^a ✉, Shaikh, R.A.^a ✉, Shah, A.^b ✉

^aKulliyyah of ICT, International Islamic University, Kuala Lumpur, Malaysia
^bComputer Science Department, King Abdulaziz University, Jeddah, Saudi Arabia

Abstract

[View references \(25\)](#)

In the past decade, the revolution in miniaturization (microprocessors, batteries, cameras etc.) and manufacturing of new type of sensors resulted in a new regime of applications based on smart objects called IoT. Majority of such applications or services are to ease human life and/or to setup efficient processes in automated environments. However, this convenience is coming up with new challenges related to data security and human privacy. The objects in IoT are resource constrained devices and cannot implement a fool-proof security framework. These end devices work like eyes and ears to interact with the physical world and collect data for analytics to make expedient decisions. The storage and analysis of the collected data is done remotely using cloud computing. The transfer of data from IoT to the computing clouds can introduce privacy issues and network delays. Some applications need a real-Time decision and cannot tolerate the delays and jitters in the network. Here, edge computing or fog computing plays its role to settle down the mentioned issues by providing cloud-like facilities near the end devices. In this paper, we discuss IoT, fog computing, the relationship between IoT and fog computing, their security issues and solutions by different researchers. We summarize attack surface related to each layer of this paradigm which will help to propose new security solutions to escalate it acceptability among end users. We also propose a risk-based trust management model for smart healthcare environment to cope with security and privacy-related issues in this highly un-predictable heterogeneous ecosystem. © 2018 IEEE.

Author keywords

fog computing IoT privacy issues security challenges trust management

Indexed keywords

Engineering controlled terms: Data privacy Data transfer Digital storage Fog Human computer interaction Internet of things

Engineering uncontrolled terms: Automated environments Healthcare environments Privacy issue Resourceconstrained devices Security and privacy Security challenges Trust management Trust management model

Engineering main heading: Fog computing

Metrics

0 Citations in Scopus
0 Field-Weighted Citation Impact



PlumX Metrics
Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)

[Set citation feed >](#)

Related documents

Comment on 'secure data access control with ciphertext update and computation outsourcing in fog computing for internet of things'

Tan, S.-Y. (2018) *IEEE Access*

SHAF: Framework for Smart Home Sensing and Actuation

Ra, H.-K. , Jeong, S. , Yoon, H.J. (2016) *Proceedings - 2016 IEEE 22nd International Conference on Embedded and Real-Time Computing Systems and Applications, RTCSA 2016*

Collaborative local triangles counting in a graph stream by using node resources



Jiyong, K. , Gee, M.O. (2016) *International Conference on Information Networking*

View all related documents based on references

Find more related documents in Scopus based on:

References (25)

[View in search results format >](#)

All | [Export](#)  [Print](#)  [E-mail](#) [Save to PDF](#) [Create bibliography](#)

-
- 1 Atzori, L., Iera, A., Morabito, G.
The Internet of Things: A survey

(2010) *Computer Networks*, 54 (15), pp. 2787-2805. Cited 4605 times.
doi: 10.1016/j.comnet.2010.05.010

[View at Publisher](#)
-
- 2 Miorandi, D., Sicari, S., De Pellegrini, F., Chlamtac, I.
Internet of things: Vision, applications and research challenges

(2012) *Ad Hoc Networks*, 10 (7), pp. 1497-1516. Cited 1103 times.
doi: 10.1016/j.adhoc.2012.02.016

[View at Publisher](#)
-
- 3 Palattella, M.R., Accettura, N., Vilajosana, X., Watteyne, T., Grieco, L.A., Boggia, G., Dohler, M.
Standardized protocol stack for the internet of (important) things

(2013) *IEEE Communications Surveys and Tutorials*, 15 (3), art. no. 6380493, pp. 1389-1406. Cited 256 times.
doi: 10.1109/SURV.2012.111412.00158

[View at Publisher](#)
-
- 4 Li, J., Huang, Z., Wang, X.
RETRACTED ARTICLE: Countermeasure research about developing Internet of Things economy: A case of Hangzhou City

(2011) *2011 International Conference on E-Business and E-Government, ICEE2011 - Proceedings*, art. no. 5881304, pp. 8741-8745. Cited 3 times.
ISBN: 978-142448694-6
doi: 10.1109/ICEBEG.2011.5881304

[View at Publisher](#)
-
- 5 Roman, R., Zhou, J., Lopez, J.
On the features and challenges of security and privacy in distributed internet of things

(2013) *Computer Networks*, 57 (10), pp. 2266-2279. Cited 297 times.
doi: 10.1016/j.comnet.2012.12.018

[View at Publisher](#)
-
- 6 Vaquero, L.M., Rodero-Merino, L.
Finding your way in the fog: Towards a comprehensive definition of fog computing

(2014) *Computer Communication Review*, 44 (5), pp. 27-32. Cited 225 times.
<http://www.acm.org/sigs/sigcomm/>
doi: 10.1145/2677046.2677052

[View at Publisher](#)
-