IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 2, March 2022
Impact Factor: 6.252

Enhancing Network Security throughSoftware Defined Networking (SDN)

N Bhagyasree[1], Nischal M R[2], Pavan Kumar[3], K Surendra[4]
Student, Department of Computer Science and Engineering[1,2,3]
Guide, Department of Computer Science and Engineering[4]
Alva's Institute of Engineering and Technology, Mangalore, India

Abstract: *The IoT connects many of the home appliances in the world, from intelligent thermostats to intelligent vehicles. By the end of 2015, we had 9 billion connected stuff. The Gartner forecast shows that the number of devices in the network will exceed 50 billion by 2020. Most of the connected devices in the existing network are based on obsolete security infrastructure and encryption, while many do not have provisions for remote updating of these devices. Taking into account the number of IoT devices, from off-shelf motion monitoring to machine tools, it is not possible to check which functions end up with any specific service or product. In short, this is the problem: you can't trust the integrity of the security of the device and determine exactly where the data is processed and stored. The SDN architecture is designed to increase the routing and networking performance of the existing networks by isolating the control plane from the data plane. The basic concept of Software Defined Networking can be applied to IoT Multi networks; however, the standard SDN implementations for wired networks are not directly suitable for distributed and ad-hoc mesh networks, which are common in IoT systems. However, the SDN architecture changes the pattern of communication of the IoT network, leading to a new approach to the manifestation of the Securities IoT network. Centralized data layer control and control layer not only simplifies data package management, but also increases safety. As mentioned above, the amount of data that flows into these systems is significant. Proper management of traffic and load balancing will help to simplify the data flow in some ways. The total system's power consumption may be reduced by the central station, which requires less power than the distributed control. To sum up, introducing SDN into IoT will help IoT and stimulate IoT in people's regular lives.*

Keywords: Software-Defined Networking (SDN), controller, OpenFlow, OpenDayLight

REFERENCES

[1] "ONF SDN Evolution," 2016.
[2] K. Sood, S. Yu, and Y. Xiang, "Software defined wireless networking opportunities and challenges for internet of things: A review," 2015.
[3] Z. Qin, G. Denker, C. Giannelli, P. Bellavista, and N. Venkatasubramanian, "A software defined networking architecture for the internet-of-things," in 2014 IEEE network operations and management symposium (NOMS), pp. 1–9, IEEE, 2014.
[4] A. Al-Fuqaha, M. Guizani, M. Mohammadi, M. Aledhari, and M. Ayyash, "Internet of things: A survey on enabling technologies, protocols, and applications," IEEE Communications Surveys & Tutorials, vol. 17, no. 4, pp. 2347–2376, 2015.
[5] D.Wu, D. I. Arkhipov, E. Asmare, Z. Qin, and J. A. McCann, "Ubiflow: Mobility management in urban-scale software-defined iot," in 2015 IEEE Conference on Computer Communications (INFOCOM), pp. 208–216, IEEE, 2015.
[6] "Opendaylight Project" https://wiki.opendaylight.org/