

SDN Application Plane Where Intelligence Meets Networking

T. Aditya¹, A. David Donald¹, G. Thippanna², M. Mohsina Kousar³, C. Madilety³
Ashoka Women's Engineering College, Dupadu, Andhra Pradesh, India^{1,2,3}

Abstract: *The software-defined networking (SDN) paradigm has revolutionized the way we think about network management and control. The SDN application plane is a critical component of this paradigm, where intelligent applications are leveraged to drive network behavior and optimize network performance. In this abstract, we explore the role of the SDN application plane in bridging the gap between traditional network management and the intelligent, dynamic network of the future. We discuss the challenges and opportunities of deploying SDN applications, including the need for standardized APIs and the importance of intelligent analytics and machine learning techniques. Finally, we highlight the transformative potential of the SDN application plane, from enabling new applications and services to improving network security and resilience. By bringing intelligence and networking together in new and innovative ways, the SDN application plane promises to revolutionize the way we design, manage, and secure our networks.*

Keywords: SDN, Application Plane

REFERENCES

- [1]. Scott-Hayward, Sandra, Christopher Kane, and Sakir Sezer. "Operationcheckpoint: Sdn application control." In 2014 IEEE 22nd International Conference on Network Protocols, pp. 618-623. IEEE, 2014.
- [2]. Karakus, Murat, and Arjan Duresi. "A survey: Control plane scalability issues and approaches in software-defined networking (SDN)." *Computer Networks* 112 (2017): 279-293.
- [3]. Banse, Christian, and Sathyanarayanan Rangarajan. "A secure northbound interface for SDN applications." In 2015 IEEE Trustcom/BigDataSE/ISPA, vol. 1, pp. 834-839. IEEE, 2015.
- [4]. Mekky, Hesham, Fang Hao, Sarit Mukherjee, Zhi-Li Zhang, and T. V. Lakshman. "Application-aware data plane processing in SDN." In Proceedings of the third workshop on Hot topics in software defined networking, pp. 13-18. 2014.
- [5]. Tatang, Dennis, Florian Quinkert, Joel Frank, Christian Röpke, and Thorsten Holz. "SDN-Guard: Protecting SDN controllers against SDN rootkits." In 2017 IEEE Conference on Network Function Virtualization and Software Defined Networks (NFV-SDN), pp. 297-302. IEEE, 2017.
- [6]. Kulkarni, Manasa, Bhargavi Goswami, and Joy Paulose. "Experimenting with scalability of software defined networks using pyretic and frenetic." In Computing Science, Communication and Security: Second International Conference, COMS2 2021, Gujarat, India, February 6–7, 2021, Revised Selected Papers, pp. 168-192. Cham: Springer International Publishing, 2021.
- [7]. Azodolmolky, Siamak, Philipp Wieder, and Ramin Yahyapour. "SDN-based cloud computing networking." In 2013 15th international conference on transparent optical networks (ICTON), pp. 1-4. IEEE, 2013.
- [8]. Francois, Frederic, and Erol Gelenbe. "Optimizing secure SDN-enabled inter-data centre overlay networks through cognitive routing." In 2016 IEEE 24th International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS), pp. 283-288. IEEE, 2016.
- [9]. Yan, Muxi, Jasson Casey, Prithviraj Shome, Alex Sprintson, and Andrew Sutton. "ÆtherFlow: Principled wireless support in SDN." In 2015 IEEE 23rd International Conference on Network Protocols (ICNP), pp. 432-437. IEEE, 2015.
- [10]. Tomovic, Slavica, Milica Pejanovic-Djurisic, and Igor Radusinovic. "SDN based mobile networks: Concepts and benefits." *Wireless Personal Communications* 78 (2014): 1629-1644.