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## **Technology SD-WAN For Internet of Things (IoT)**

### **Abstract**

A software-defined wide-area network (SD-WAN), is a network that is abstracted from its hardware, creating a virtualized network overlay. Operators can remotely manage and quickly scale this overlay, which can span over large geographical distances. It is an application of software-defined networking (SDN). SD-WAN can connect several branch locations to a central hub office or cover multiple locations in a large campus such as a university campus.

SD-WAN simplifies the management and operation of a WAN by decoupling the networking hardware from its control mechanism. This concept is similar to how software-defined networking implements virtualization technology to improve data center management and operation. A key application of SD-WAN is to allow companies to build higher-performance WANs using lower-cost and commercially available Internet access, enabling businesses to partially or wholly replace more expensive private WAN connection technologies such as MPLS.

The Internet of Things (IoT) shall be able to incorporate transparently and seamlessly a large number of different and heterogeneous end systems, while providing open access to selected subsets of data for the development of a plethora of digital services. Building a general architecture for the IoT is hence a very complex task, mainly because of the extremely large variety of devices, link layer technologies, and services that may be involved in such a system.

Many IT organizations have found implementing and integrating IoT systems challenging due to network complexity, visibility issues and potential security breaches. Moreover, IoT has high requirements for availability and accessibility of real-time data. SD-WAN encompasses several important features that enable IoT growth. The Internet of Things and advanced robotics, industrial biotechnology, 3D printing, new materials and nanotechnology. Some of these technologies are already used in production, while others will be available in the near future. All are developing rapidly. As these technologies transform the production and the distribution of goods and services.

SD-WAN's segmentation capabilities enable the separation of private data from IoT traffic. This addresses one of the most important IoT concerns: The possibility of devices being compromised and providing access to sensitive data. In this way, SD-WAN segmentation offers a level of protection that traditional networking methods don't offer. As long as private data and IoT traffic are properly segmented throughout the network, private data remains safe regardless of changes that come with the IoT applications.

## References

OECD. 2017. The Next Production Revolution: Implications for Governments and Business. Paris: OECD Publishing, ISBN 978-92-64-27103-6

Andrea Zanella. 2014. Internet of Things for Smart Cities. IEEE INTERNET OF THINGS JOURNAL. VOL. 1, NO. 1.

Marlese Lesing. 2020. What is SD-WAN (Software-Defined Wide-Area Network)? di <https://www.sdxcentral.com/networking/sd-wan/definitions/software-defined-sdn-wan/> (diakses 10 April).

Zenlayer. 2019. How Does SD-WAN Support Internet of Things (IoT) Growth? di <https://www.zenlayer.com/blog/sd-wan-supports-iot-growth/> diakses pada tanggal (10 April).

<https://en.wikipedia.org/wiki/SD-WAN> (di akses 10 April).

[https://www.cisco.com/c/en\\_id/solutions/enterprise-networks/sd-wan/index.html](https://www.cisco.com/c/en_id/solutions/enterprise-networks/sd-wan/index.html) (diakses 10 April).