1. **Intro**
   * What is SDN?

SDN or software-defined networking gives the operator the ability to manage their entire network consistently and holistically by controlling the network in an intelligent and certain way. We can program the behavior of networks using SDN. SDN allows a simple interface to the complex data center so that the data center network operator can see clearly what is going on in the network of that data center. (TechsavvyProductions, 2022)

1. **Table Content**
   * How SDN work?
   * SDN has five fundamental characteristics
     + Plane separation.
     + Simple Device.
     + Centralized control.
     + Network automation and virtualization.
     + Openness.

(Kifayat Ullah, 2021)

* + Network programmability?
    - SDN allows control of network behavior by software outside of the network devices that provide the physical connection. As a result, network operators can tailor the behavior of their networks to support new services and even individual customers. By separating hardware from software, operators can quickly introduce innovative, differentiated new services - unconstrained by proprietary and closed platforms.

(What is Software-Defined Networking (SDN)?, 2022)

* + Logically centralize intelligence and control.
    - SDN is built on logical centralized network topology, allowing intelligent control and management of network resources. Traditional network control methods are distributed. The devices operate automatically with limited awareness of the state of the network. With the kind of centralized control that SDN-based networking provides, bandwidth management, recovery, security, and policies can be very intelligent and optimized — and an organization has a big picture. about the network.

(What is Software-Defined Networking (SDN)?, 2022)

* + Abstraction of the network?

Services and applications that run on SDN technology are abstracted from the underlying technologies and hardware that provide the physical connection from the network controller. Applications will interact with the network through APIs, rather than management interfaces that are tightly coupled to the hardware.

(What is Software-Defined Networking (SDN)?, 2022)

* + Openness?

The SDN architecture ushers in a new era of openness — enabling cross-vendor interoperability and fostering a vendor-neutral ecosystem. The openness comes from the SDN approach itself. Open APIs support a wide variety of applications, including cloud orchestration, OSS/BSS, SaaS, and business-critical network applications. In addition, intelligent software can control hardware from multiple vendors with open programming interfaces such as OpenFlow. Finally, from within the SDN, smart network applications and services can run in a shared software environment.

(What is Software-Defined Networking (SDN)?, 2022)

* + Apply of SDN IRL
    - A home network may need changes to their router/switch once per device replacement.
    - A small need their switches and routers to change their configurations may be once a year.

(TechsavvyProductions, 2022)

**Citation**

Ciena(2022, April 10). What is Software-Defined Networking (SDN)?. <https://www.ciena.com/insights/what-is/What-Is-SDN.html>

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