



SDN – Don't Believe The Hype

Wikipedia says software-defined networking “is an approach to building data networking equipment and software that separates and abstracts elements of these systems. SDN allows network administrators to have programmable central control of network traffic without requiring physical access to the network’s hardware devices... SDN decouples the system that makes decisions about where traffic is sent (the control plane) from the underlying system that forwards traffic to the selected destination (the data plane).”

Listening to every vendor that has rushed in to this new space to attempt to own the definition of SDN and control the minds and direction of the industry brings about memories of the title of a classic Public Enemy jam, “Don't Believe The Hype”. What ever you do, don't, don't, don't believe the hype!

Let's break down the definition of SDN and put it in plain terms.

SDN is an approach (a way, a path, a philosophy) to building (build your own) data networking equipment and software that separates and abstracts elements (deconstructs in to its elementary subcomponents to isolate and standardize to reach the control and the lowest unit and overall cost possible) of these systems.

SDN allows network administrators to have programmable central control (it is all about control of everything) of network traffic without requiring physical access to the network’s hardware devices (making the hardware simple, dumb and inexpensive).

SDN decouples the system (breaks apart the hardware from the operating system) that makes decisions about where traffic is sent (the control plane) from the underlying system that forwards traffic to the selected destination (the data plane).

To put SDN in proper perspective using a real-world example just think about open source and what impact the concept of open had on closed systems. Remember what Linux did to IBM and what Asterisk did to the PBX – Nortel, Avaya, etc. In the case of Asterisk it made the PBX an application on a server rather than a proprietary operating system on proprietary equipment. Now consider optical and Ethernet transport equipment and routers: how they are built, how they operate and who builds them. Imagine a world where a DWDM optical switch was a standard chassis filled with standard cards and form pluggable lasers all being controlled by an open source operating system running on a standard, generic server. Imagine the same simplicity, interoperability and standardization for an Ethernet switch, or router. Given the precedent, it might not be that difficult to imagine.

This might seem like a large undertaking without a particular center of gravity to push the agenda of change – and then there was Facebook and its Open Compute Project.

On Wednesday, May 8, Frank Frankovsky, chairman and president of the Open Compute Project had this to say: “A little more than a month ago, the Open Compute Project celebrated its two-year anniversary. When Facebook first launched the project, it was our hope that we could spark more conversation and more collaboration around the development of efficient data center technologies. The OCP community has since grown to 50-plus official members and thousands of participants; we've launched a foundation to guide the project; and we've started to advance open designs for everything from racks and storage boxes to motherboards and interconnects.

“This is amazing progress in such a short span. But something's missing. We are working together, in the open, to design and build smarter, more scalable, more efficient data center technologies — but we're still connecting them to the outside world using black-box switches that haven't been designed for deployment at scale and don't allow consumers to modify or replace the software that runs on them.

“With that in mind, we are today announcing a new project within OCP that will focus on developing a specification and a reference box for an open, OS-agnostic top-of-rack switch. Najam Ahmad, who runs the network engineering team at Facebook, has volunteered to lead the project, and a wide variety of organizations — including Big Switch Networks, Broadcom, Cumulus Networks, Facebook, Intel, Netronome, OpenDaylight, the Open Networking Foundation, and VMware — are already planning to participate. Work on the project will begin in earnest at the first-ever OCP Engineering Summit, being held at MIT on May 16.

“It's our hope that an open, disaggregated switch will enable a faster pace of innovation in the development of networking hardware; help software-defined networking continue to evolve and flourish; and ultimately provide consumers of these technologies with the freedom they need to build infrastructures that are flexible, scalable, and efficient across the entire stack.”

SDN is an effort to unify and homogenize internetworking completely by opening up the actual network in between the servers the reside within disparate data centers which will enable and unlock the capabilities that the virtual machines running on those servers in the global data centers already possess. In order to do that the networks must be taken over. It is not an easy task and will require more than just control of the equipment to make it work. It will also require control of the underlying dark fiber. False media, by design, or by default will cloud judgment and give way to bad decisions. If you don't want to get caught on the short end of the equation just don't believe the hype. **IT**

Hunter Newby is CEO of Allied Fiber (www.alliedfiber.com).