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Weekly Article Summary #2

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Summarized Article: <http://cacm.acm.org/magazines/2013/9/167153-software-defined-networking/fulltext>

Article #2: <http://www.infoworld.com/d/security/the-perfect-security-defense-right-under-our-noses-225865>

It’s the age of APIs, and building software that can easily be commutable to new software projects has become the standard of this age. However, one thing in particular has stayed the same, and that is building software that is run across networks, which is what Keith Kirkpatrick discusses in his article, “Software-Defined Networking” in the September issue of *Communications of the ACM*.

Kirkpatrick’s article highlights the invention of “software-defined networking (SDN),” which is a “new architecture that is designed to use standardized application programming interfaces (APIs) to quickly allow network programmers to define and reconfigure the way data and resources are handled within a network.” Essentially, these SDNs allow for software applications to reconfigure and more easily handle the networking perspective of its code. The basis on how it does this is that SDN effectively “decouples the link between the switch itself and the data-routing instructions, while adding an application programming interface between the two.” By doing this, applications will be able to virtually alter and use the network it is connected to, which allows developers to build without necessarily having to worry about the physical topology and the physical setup of the network. Andrew Harding, a senior director of product marketing at Big Switch Networks, makes the exclamation that “now that you can program the network, there are a million applications you can pursue.”

I feel like this is a very fascinating step forward in computer networking. Having taken a networking course, having to build you application around the existing network stack does seem like it could have its disadvantages, but being able to no longer worry about things like connecting to the correct IP address or port number, as Kirkpatrick points out, would be a worthwhile experience to have, and certainly make developing applications a far bit easier. In addition to this, these SDNs are also allowing for better allocation of IP address, and providing reductions in transmit and work time. Kirkpatrick states that “when Genesis Hosting adopted SDN in their hosting facility, they gained a reduction in network administration costs of 50% and a reduction in IP address usage by 60%.” Knowing all of this, I’m more that interested in hopefully one day being able to develop with SDNs, and look forward to hearing more about the area of research in the future.