



Network Virtualization Merging LANs & WANs

FatPipe Networks – August 1, 2016

For as long as anyone in the networking world can remember, management of local area networks (LANs) and wide area networks (WANs) has been distinctly different. LANs were primarily the responsibility of local IT departments, while WANs have been made up of MPLS and Internet connections controlled by carriers. Network virtualization (NV) is starting to blur the lines between the LAN and the WAN.

After all, virtual connections traverse both the LAN and WAN. Less clear, however, is how this network virtualization merging LANs & WANs network services is actually going to occur. In some quarters relying on one vendor to unify LAN and WANs will have a certain amount of appeal. But there's also already a small cadre of vendors dominating SD-WAN deployments. Thanks to the rise of cloud computing, WANs are now obviously a more important strategic investment than ever. In fact, IDC is now forecasting the SD-WAN market would grow from less than \$225 million last year to more than \$6 billion by 2020.

Driving those investments is the simple fact that the performance of any given cloud application is now directly tied to the quality of the WAN services being used to invoke it. At the same time, IT

organizations want to be able to centrally manage WANs using the same management plane they are deploying inside their data centers. After all, it's now only a matter of time before the rise of hybrid cloud computing applications puts LANs and WANs on equal footing inside the enterprise.

As a result, vendors all across the networking spectrum are racing to essentially flatten extended enterprise networks in a way that makes LANs and WANs easier to manage via a common management console. There is also a wide range of approaches being used to connect the WAN and the LAN.

Cisco, for example, is using its IWAN product, which it sells to a wide range of operators to use for managed services, to bridge the gap. In addition, at Cisco Live! event this month, Cisco announced that the Cisco Digital Network Architecture has been extended to add support for branch routers. Prashanth Shenoy, director of enterprise networks for Cisco, says the end goal is to provide an end-to-end approach to managing network services.

"The term SDN is being over abused. Everyone now has their own definition," said Shenoy. "The key concept is to take DNA out to the network edge."

That's a view from the Cisco's view of WAN side. But what about from inside the data center – which is, after all, the new LAN?

VMware, with its leading NSX NV product, is thought of a direct competitor with Cisco's Applications Centric Infrastructure (ACI) architecture for SDN. But the two platforms can also be complementary and show how SDN technology and traditional networking technology need to work together to bridge the WAN and LAN. Early this year SDxCentral published a report that highlights why Cisco's ACI and VMware's NSX platform aren't necessarily mutual exclusive. The Hutto Independent School District outside of Austin, Texas, chose a path to use NSX as a virtual overlay on top of traditional LAN infrastructure. This approach can significantly increase the flexibility when you extend your LAN out to the WAN.

Although NSX is more often thought of as data-center applications, its use as an overlay makes it strategic when connecting out to the WAN. Meanwhile, SD-WAN startups such as VeloCloud and Viptela are pitching new, SDN approaches to connecting the WAN to either services in the cloud or to enterprise data centers. And the SD-WAN space is constantly evolving

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player FatPipe Networks with partnerships – SD-WAN recently revealed it is working with Avaya to extend the management reach of Avaya's SDN Fx platform to SD-WAN appliances built by FatPipe Networks.

It's clear over time that these two markets will come together. In the meantime, IT organizations would be well advised to start asking more questions about how the varying flavors of NV and SD-WAN technology can work together. The only real debate at this point is the degree to which that unification will be accomplished via technology alliances versus standardizing on a single overarching network architecture.