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Silver Peak CEO: We're re-imagining the WAN for a cloud world

CEO and founder David Hughes sees huge opportunities in software-defined WAN.

BY JOHN GALLANT, NETWORK WORLD

Silver Peak, Inc., made its name as a top provider of wide-area network optimization capabilities. But the company has its sights set on a loftier goal today: Completely changing the way you build your entire WAN. Silver Peak is moving rapidly to support so-called software-defined WANs, which make it easier and cheaper to connect branches and end users to cloud applications.

David Hughes founded Silver Peak and became CEO in 2013. In this conversation with John Gallant, Chief Content Officer of IDG US Media, he talks about the customer pressures driving this strategic change. He also discusses how the move distances Silver Peak from competitors like Cisco and Riverbed, and describes new tools from Silver Peak that enable customers to build networks based on real business goals versus arcane tech specs.

How do you define your market and what differentiates you from competitors?

Traditionally, we've been seen as a WAN optimization player. That's certainly where we made our name. We've been able to satisfy some of the largest customers in the world. Now, we're looking beyond WAN optimization, looking at how to rethink the way you build a wide-area network. We're hearing from customers that the current way of building a WAN using MPLS, for instance, just isn't satisfactory as they move to the cloud. They want to be able to use the Internet more effectively than they can today. Where we see our future differentiation is around providing very ready access, very easy connectivity to broadband services so people can build a wide-area network much more quickly and efficiently.

Let's talk about those customer pressures. Customers are actively working on their own private and hybrid clouds, there's growing use of software-as-a-service, as well as infrastructure-as-a-service and platform-as-a-service. What kind of strains does all that put on the typical wide-area network? Where are the pinch points and what do you see as the solution to those problems?

If we look back 10 years to the peak of MPLS, it was really designed well for the problem that people had in those days of communication from branch-to-branch and branch-to-data center, where most applications were in the data center. The challenge customers are facing now is that more and more of their applications are migrating from the data center to the cloud, either to be hosted in IaaS or even more likely to be a SaaS service like Salesforce.com or Office 365 or Box. The fundamental traffic flow is no longer branch-to-data center. It's really branch-to-cloud and the MPLS networks are generally built to primarily send everything back to a data center or headquarters or backup data center and then out to the Internet. That really doesn't make sense anymore. People want to find a shortcut to get the user in the branch connected to the app in the cloud. It's this move to the cloud that's making people rethink their wide-area networks.

Talk about the solutions there, David. What WAN architecture should customers be building?

The fundamental thing that people need to think about is how to build a virtual WAN, a WAN that's an overlay so they can mix and match services anywhere. They're comfortable from an SLA point of view

Silver Peak CEO David Hughes: "People want to find a shortcut to get the user in the branch connected to the app in the cloud."

with MPLS today but they want to add broadband. They want to be able to use Comcast or they want to be able to use LTE services from Verizon or whomever to give them more cost-effective and more agile connectivity in the branch. An overlay lets them mix and match those services in a very easy way. They're no longer tied to a single service provider.

Think about VMware virtualization. The hypervisor provided a way for people to quickly migrate software from a Dell server to an HP server to a Dell server as they went through an upgrade path and they didn't have to reinstall everything or have any downtime because the abstraction layer, the hypervisor, let you mix and match your underlying infrastructure. In the same way going forward, virtual wide-area networks with an overlay will let you

mix and match what's underneath. That really gives you agility and the ability to take advantage of lower cost services.

I want people to understand exactly what you mean by a virtual WAN. Talk to me about what that is and how you help them build that?

Perhaps as an example to get an idea of how someone starts using a virtual WAN, anywhere you could Skype from you could potentially build a branch. All you need is an IP address on an Ethernet port. From there, a device can automatically register and become part of that customer's network so it's signing into an overlay which runs over the top of any kind of IP network, be it MPLS or a cable-based system or wireless LTE.

What's the role of WAN optimization in this virtual environment? People understand that today as two devices at the ends of a link.

There is a name that some people use, SD-WAN or software-defined WAN which embodies some of this. Both SD-WAN and WAN optimization are addressing problems that people have in the wide-area network. The fundamental value proposition of WAN optimization is about performance, performance at a distance, making sure applications work just as well if I'm coming from Singapore or San Francisco. For virtual WANs and SD-WAN, the primary value proposition is about connectivity. I want to easily connect my branch with a minimum of fuss and I want to be able to do that cost effectively and reliably, securely. We obviously have our WAN optimization family and we've recently announced an added product family focused on SD-WAN. We see that both those value propositions apply for a number of customers. The intersection between these two worlds is actually pretty big.

That makes sense. Is that product that you referenced the Unity product?

Unity is the umbrella architecture and the new product is called EdgeConnect.

Let's talk first about Unity. Help people understand what it is.

Unity is our name for an overlay, our fabric which lets you connect branches, headquarters, IaaS services, SaaS services all together. You don't have to think about it being attached to one carrier. You can use however many carriers you want and it's not just physical locations but physical and virtual locations.

Is this similar to the concept that Cisco was talking about recently with the Intercloud?

I'm not sure. There may be some similarities there. I think for Cisco, they have their IWAN [Intelligent WAN], which is their way of taking the legacy routing infrastructure and trying to add things like performance routing to be able to use multiple links cost effectively. But it's not really an overlay technology. It's more a way of tweaking routing to try to solve some of the problems with using multiple links. An overlay is different in that you're not really using all those old protocols like EGP and OSPF. You're using SDN-influenced technology with end-to-end connectivity and single-hop routing. It's really a different way of thinking about things. It's more influenced by the work in the data center around SDN than by the routing protocols of the last two or three decades.

Customers can't put a device at a cloud provider so how do you create that kind of overlay with all those cloud providers?

There are really two cases. The first case is when it's an IaaS service like Amazon. In that case, yes, we can be inside running as an AMI (Amazon Machine Image).

Essentially a virtual instantiation of the product?

Yes, and we have similar capabilities for Microsoft Azure and VMware vCloud Air. In all those cases you can run Silver Peak software inside your virtual private cloud. The second case is that of the SaaS service where, unless you're a very large customer, if you go to Salesforce or Office 365 and ask them to take your piece of hardware, the most likely answer is going to be no. For that, we take a different approach, which is while you can't be inside that service provider, you can certainly be very close. If you look at the way the network and the cloud are evolving, there are a few interconnect points which are one hop away from a lot of people. To the extent that you can build a network hub that is either at or close to that location, you can be very close to those SaaS providers. We track where all the SaaS providers are providing their services from and we'll route your traffic to the egress point from your network that's closest to that provider, basically getting you to the doorstep of Salesforce or Office 365.

That makes sense. I was reading a piece by Zeus Kerravala in Network World where he was talking about Unity actually having the ability to determine, based on traffic patterns, what is the optimal route. Can you talk a little bit about that?

Essentially, we know where all the Office 365 data centers are around the world and we have a service with that information so our customers are able to measure from each gateway the distance to each of those services. That provides the customer - it's all automated - the information needed to take the best route for that service.

Based on collective intelligence from all your customers?

Yes, both the measurements that the individual customers are making as well as collective information that's coming from our Unity intelligence service.

Can you talk to me about a customer and what they've seen from using the Unity product?

Sure, we have a number of customers, but one of them is Interrol in Europe. They've used us to augment an MPLS network and build out using the Internet with roughly five times as much bandwidth for the same cost as what they had before. We've got a lot of other customers in the midst of making the same transition. It's a very common path right now to be looking at: How do I take my MPLS network and augment it with Internet connectivity? That's the main driving use case we see with our customers at present.

Silver Peak's latest: The Unity EdgeConnect product line.

There's a lot of talk lately about software-defined networks. How does SDN match up with the wide-area network trends that you're talking about? Do these two things synch up?

SDN has been a buzz topic in the data center for probably five years now. Some people see it as a solution in search of a problem. There are certainly some niche applications but for a lot of enterprises, there's not a compelling reason to implement SDN today. Maybe soon. The difference that I see in the wide-area network is that we are solving a real problem customers have. They want to be able to leverage multiple networks. They want to get agility. They want the automation that comes with SDN and that's where this SD-WAN piece comes in. It's one of the first instances of SDN where it's driven by a real problem. You're probably familiar with the Open Network User Group that grew up in New York. They've been pushing the open networking SDN angle for a while. They've recently started to look at SD-WAN. It's been voted two or three sessions in a row now as the top use case because it's applying a lot of the ideas - the overlay ideas, the automation ideas - to a real and present problem.

Is there a role for the carriers in this or do they see it as a threat?

They see it as a threat but I think there is a role. For every customer that wants to take the network into their own hands and wrest control back from the carrier, there are other customers that really want to have someone handle their networking soup to nuts. While SD-WAN is sometimes looked at as a way of giving the customer leverage to mix and match carriers, it's also a very good way of building your managed service. We've been engaging with some forward thinking service providers who are looking at how to leverage SD-WAN technology to be able to provide managed services more cost effectively. I think it's definitely a threat but it's absolutely an opportunity for service providers that are willing to think a little bit outside the box.

It would seem that they are the ones who are ideally situated because they're located near all of the cloud providers. Whether you have an office or not they have something close to the cloud provider.

Yes.

And they can be that point of egress that you talked about.

Yes, they certainly have multiple points of presence so they can provide a regional hub service, for instance. There was an announcement we had with Equinix about a year ago where they provide Performance Hub service because they've got all of those locations. They are a real estate-driven service provider but even for the traditional service providers there are opportunities for them to do some really creative things.

How does this change the competitive dynamic for Silver Peak? There are a lot of companies in your space. There's Cisco, Riverbed, Dell. I'm sure I'm forgetting a few other folks that you compete with. Where do they stand on this transition?

As we move beyond WAN optimization, we face a different set of competitors. Some of those competitors that are in the WAN optimization space like Riverbed don't appear to be making a transition into this new world of SD-WAN and virtual WAN overlays. From a competitive point of view, there's always Cisco. Cisco has pretty much a stranglehold on branch infrastructure in enterprises and, of course, they also hear what customers are asking for in terms of the problems they're facing. But they have continued to sell branch routers and to continue things along the [current] lines. When you look at the landscape, it's us and some brand new companies that I think provide the innovation in this space and really provide the true overlay technology to build a virtual WAN.

How many months or years lead do you think you have on this versus competitors?

I think that's the hard way to measure things. How are we uniquely positioned? For 10 years we've been building overlay networks. A little known secret is that we've always been an overlay. Right from version 1.0 of our WAN optimization software we used tunnels to build an overlay between all of our devices, where almost all the other vendors were [using] PCP proxies. They were proxies at heart. We used to get beaten up because we were using these tunnels and building an overlay. What's really interesting is that as the requirements have changed, as people have come to understand that the currency of SD-anything is building this virtualization layer, our heritage is really becoming a strength. That puts us in a unique position. Having 2,000 customers where we've deployed our software and hardware appliances running some of the biggest wide-area networks in the world, means we're bringing to bear mature software and experience with WANs that puts us at an advantage with respect to someone coming out with version 1.0 of their solution. Even if they've got some great ideas, it's going to take some time to mature.

What percentage of your products are delivered as hardware versus software?

More than half of our business is pure software, people buying virtual appliances either by subscription or on a perpetual basis. Less than half now is the same software delivered on hardware that we supply. We've seen that transition happen pretty swiftly. I think it's probably about four or five years ago, we shipped everything as hardware and in those years the business has moved really dramatically. It's pretty exciting to see that and certainly as we moved into that software world we learned a lot about the way the world has changed and where the world is going. It's much more about agility and automation than about some of the things that traditional networking people worry about.

Do you envision a point in the future where it's 100% software based?

Possibly, but I think there are always customers that are looking for a complete turnkey, off-the-shelf solution and so we don't want to force the customers down a path they don't want to go. Better to let the customers choose. There is definitely a minority going with hardware but I'm not sure it ever gets to 100% software.

What about the mix between this new software-defined WAN focus versus traditional optimization capabilities? Where does that stand today?

I don't so much think of them as opposed to each other.

I didn't mean to imply that you were but just in terms of what's driving the business.

I think that for WAN optimization it's about performance and the performance over distance, as I said before. For SD-WAN it's about connectivity. Those are two different problems. The WAN optimization market is mature and people have a sense of the size of it, more than $1 billion. SD-WAN is an emerging opportunity. It disrupts the branch infrastructure market and the

MPLS services market. Both of those markets are worth multiple billions of dollars so we expect SD-WAN or virtual WANs to be a multiple billion dollar market. Over the long run we expect that business will be bigger than WAN optimization.

Would you ever offer SD–WAN as a service?

Ever is a strong word, but at Silver Peak we're really focused on being a software company, a leading software company. It's not in our plans to become a service provider. We are working with service providers, letting them use our technology to provide services.

You took over as CEO in 2013. How did you change the path of the company?

I stepped up as CEO because I was very excited about the future. I saw that with the SDN movement coupled with what was happening with cloud, coupled with what we had seen in terms of the adoption of software, there was a big opportunity for us to move beyond WAN optimization. The key objectives I shared with the company were twofold: We wanted to continue to execute in WAN optimization to be able to deliver to our customers scalable acceleration; but at the same time invest into what we saw coming beyond WAN optimization, which is culminating in what we're doing with Unity and Edge Connect.

Where do you go from here? What will we see in 2015 and beyond?

With the launch in June of our EdgeConnect portfolio, we move from a one-product-family company to having two product families, one for WAN optimization opportunities and problems and the other for this emerging branch connectivity SD-WAN opportunity. You'll see us continue to build and innovate in both areas but particularly on the SD-WAN side. This is a very new industry, a new opportunity and so there's a lot of room for innovation. While we're extremely proud of what we have right now and we think we're leading the industry, there's a lot more that can be done to drive automation, to drive flexibility, to make these networks easier to scale, more rapid to deploy and that's the path forward.

Talk about the EdgeConnect announcement.

Unity, as I said, is the overlay. The announcement was about EdgeConnect, which is a very specific product family. It's all about being able to take a box or a piece of software, plug it in a branch and be up and running as a full branch within minutes instead of months. It's about being able to use whatever service is available in that location, whether it's plugging in a 4G LTE stick to get going while you're waiting for MPLS to arrive or plugging into a consumer broadband cable circuit. You can be up and running straightaway. Part of it is about that zero-touch provisioning, really easy to get up and running.

The other aspect is about being able to provision with business intent policies. For most of the history of networking, network management and automation has been looking at devices at an element level and how do I configure all of these elements. But the customers' problems aren't really about elements. They're really about services at a network level. A WAN fundamentally is about connecting users to apps. If you can let a customer describe their problem in that way, then you can actually reduce building a network to filling out just a single set of forms on one screen. So, I want to build a voiceover layer, I want it to have mesh connectivity, I want it to meet these quality of service goals, etc. Once you've said that, now every time you add a branch we automatically provision it. There's no need to go back and do any extra work as you add incremental branches. That ability to specify things with a business intent policy at a level way above the individual elements, I think, is something which will provide savings not just from a bandwidth point of view. When you say savings, sometimes people jump to the bandwidth savings or Internet versus MPLS. There are really three kinds of savings: there's bandwidth; there's OpEx, because you can make this network much easier to run; and then - looking a bit farther forward - there's CapEx savings, because as you implement a virtual WAN like EdgeConnect, you ultimately can implement a thin branch architecture. You don't need routers and firewalls in all of these branches. You end up with a much lower CapEx cost for building your wide-area network.

How do you handle security in this new WAN?

We're partnering with a number of security vendors because there are many aspects to security which go beyond what we're talking about. The fundamental thing that we do with EdgeConnect is enable you to deploy directly onto the wide-area network without a router or a firewall in front of you. If you think about the traditional WAN optimization deployment, it was always behind a firewall or router and you're trying to be transparent and fit into the existing network architecture. With EdgeConnect and with a virtual WAN you can plug straight into the Internet and in order to do that we need to be hardened against attacks coming in and we need to encrypt everything. The overlay is encrypted with 256-bit encryption edge-to-edge and that provides the secure fabric regardless of whether you're running over the Internet or MPLS. You've got an infrastructure that is very secure.

What about management tools?

In terms of components in the solution, there's the EdgeConnect devices which go in the branch and there's the Unity Orchestrator. The orchestrator or controller is a thing that manages the network. It's the place where you apply policies and where you get a little reporting - reporting on applications, reporting on the destination, not just saying it's HTTP traffic but is it traffic for Facebook or is it to Salesforce or is it to someplace in the middle of China where we don't think we've got any business going? That kind of visibility you get with our orchestration. As far as integrating with third-party devices, as well as networking-based things like SNMP, which is standard, we have a full set of REST APIs that are there for automation, both for controlling our devices and applying policy as well as for extracting information like all of the statistics that we collect.

David, what else should we know?

We're very excited at Silver Peak about the change that's happening in the industry and being able to partner with customers as they look to move beyond MPLS and build these new virtual WANs. We think that there's a lot of value that can be provided with flexible solutions, being able to use whatever network you want, to do it securely, getting control and visibility, being able to get performance. You don't sacrifice performance using the Internet. Of course, there are the three aspects of savings that we talked about. We're very excited about what's happening.

So you want people to know Silver Peak not as a WAN optimization company but as an SD–WAN company?

Yes, or even more broadly as a WAN company. Helping people with their WAN challenges is where I see us going forward. It's about how we build the best possible WAN with our customers.

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