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Riverbed® Stingray™ solution customers speak out about their move from
Appliance-based application delivery

Summary:

Application delivery solutions sit at the nexus connecting users to business services and data, therefore, selecting between solution options is not a decision made lightly. Switching from time-tested solutions and rock-solid suppliers is simply not done without compelling reasons. This is precisely what Riverbed® Stingray™ solution customers have done. Our goal with this research was to understand the perspective of these customers as they made that critical decision. We found we could group the reasons for switching into two general categories. First, customers who found that they could perform application delivery operations more efficiently and manage capacity more cost effectively. Second, there were the customers who found that they realized new business value.

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Introduction

A business' competitiveness often hinges on its ability to deliver high performance software services and data to users, wherever they are, in the most cost efficient manner possible. Businesses are more likely to succeed when they can ensure positive online experiences and interactions. Cost effectively guaranteeing positive experiences is challenging because modern business services and applications are a collection of software components, data resources and IT infrastructure. Software, data and infrastructure dynamically interact with each other when responding to user requests that come from anywhere in the world and at any time. This dynamic interaction means that it is not enough to develop highly efficient code or create query-optimized databases or deploy high-speed file serving to guarantee fast response times. It means that application delivery solutions become a significant factor in ensuring positive online experiences and interactions.

Application delivery solutions contain the intelligence to efficiently direct, balance and accelerate how user requests flow through the collection of resources delivering a business service. Application delivery solutions sit at the nexus that connects users to business services and data, therefore, selecting between solution options is not a decision made lightly. Switching from time-tested solutions and rock-solid suppliers is simply not done without compelling reasons. This is precisely what Riverbed® Stingray™ solution customers have done. They have switched from appliance-based[1] solutions and rock-solid suppliers, such as F5 Networks and Cisco®, to a software-based solution from a relatively small, albeit firmly established, supplier.

When Ptak/Noel interviewed Riverbed Technology customers about their choices, what we found was both expected and surprising. Expected in that customers had two table-stakes[2] criteria for software-based application delivery solutions:

  - Performance equivalence to their existing hardware solutions. While the specific performance metrics used for comparison varied depending on the customer's application types, customers were adamant that Riverbed Technology's solution had to match or exceed their existing hardware solutions before investigating any other criteria.
  - Enterprise-class support. As Tim Maliyil, CEO of AlertBoot™, put it, "We won't tolerate any 'use at your own risk' technologies. There is too much at stake for less than commercial-grade products and support."

Surprising in that even demonstrating toe-to-toe performance and support was not quite enough to prompt the decision to switch solutions. There often was an additional motivator beyond offsetting switching costs[3] with aggressive payback timeframes of four to eight quarters. Once customers had satisfied themselves that Riverbed Stingray solutions could meet their table-stakes criteria, we found that their reasons for switching could be categorized into two types:

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[1] Appliance-based solutions contain hardware and software that are integrated and optimized for peak performance.
[2] Table stakes criteria are features or capabilities that a solution must have to be considered a serious option for buyers.
[3] Switching costs typically include purchasing and installation expenses, staff training time and costs, troubleshooting new processes and opportunity risks.

- Capability improvements: Customers could perform application delivery operations more efficiently and manage capacity more cost effectively because of Riverbed Technology's solution.
- New business opportunities: Customers could achieve new value because Riverbed Technology's solution architecture is fundamentally different than its competitors.

Capability improvements as the switching motivator

Price/Performance ratio

One table-stakes criteria for all Riverbed Technology's customers is testing whether a software-based solution installed on off-the-shelf hardware can match the performance of hardware specialized for computationally-intensive operations such as encryption, compression and server persistence operations. Some customers noted that they paid particular attention to the SSL Transactions per Second (TPS) metrics because offloading computationally-intensive encryption operations to specialized hardware has been a key reason hardware-based solutions have dominated the application acceleration market for so long. The interviewees all agreed that IT managers leverage their existing tools, metrics and data used with their installed hardware solutions to test the performance.

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One interviewee warned that comparing a single Riverbed Technology node implementation with a single hardware box is not quite an apples-to-apples comparison because the scaling models are very different. He noted that for his testing pitted a single F5 box versus five Riverbed Technology solution nodes running on commodity blades infrastructure. Both solutions delivered the ten thousand transactions per second performance he was looking for, i.e. his table-stakes were met; however, the key difference was that Riverbed Technology's **price per transaction** ratio was far better than the F5 solution. Other interviewees concurred that the price performance, rather than simple performance equivalence, was a compelling reason to switch.

Speed of change through virtualization

Speed of change is a significant motivation for moving to a virtualized platform. With virtualization, software developers can design, test and package new applications as a single deployable image, which simplifies and speeds up the rate of application releases deployed into production. It also enables proactive control over an application's production capacity, as IT operations can rapidly deploy more instances of the application in response to demand.

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> - YottaServe improve performance of web applications that have widely changing server resource footprints
> - Netic as much as 95% of the application deployment time

Yet, the interviewees noted that appliance-based application delivery solutions tended to hamper their virtualization efforts.   IT organizations need precise control over how the traffic traverses

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the application tiers to implement those changes without impacting customer experience. For example, Matt Reidy, Director of IT Operations, SnagAJob.com™, noted, "If we need to make changes to one server, we can use the automated programming interface (API) to drain the node and then bring it back into the pool. We couldn't do that with our previous hardware solution."

Incremental costs to scale capacity

Some customers noted that Riverbed Technology's scaling model was a significant advantage because it enabled incremental capacity scaling at much lower price points and with less difficulty. The solution provides the ability to cluster any combination of active and standby traffic management units.

Hardware solutions have typically employed an active-passive model of scaling capacity, which meant customers would have to buy units in pairs – one active unit and one standby unit. Customers expressed frustration with the active-passive model for several reasons:

 • It required them to double their installed capacity even in situations when they were only exceeding their current capacity by a relatively small amount. "If I needed 2000 extra transactions it means installing two 10,000 units, one active and one passive, because I can mix and match capacity."
 • It creates a significant capital expense for only an incremental capacity increase. "There's the up-front cost of doubling the hardware and then paying maintenance on all the capacity that's idle until we grow into it."
 • Installing the additional capacity was more difficult and time consuming. "Besides waiting two weeks for the new box to show up, adding another box in parallel wasn't easy in our case. We ended up doing a lot of extra change management work to avoid impacting the user experience while we were adding the box. That extra work was the real headache."

In contrast, Riverbed Stingray solution customers commented on the ease with which they could add incremental capacity. They attributed the simplification to the 'internal logic' of the scaling model which 'automatically understood how to scale linearly,' and to software deployment that was easier to automate. "Even as you add more nodes, you only need to have one extra as standby that can drop in behind the active nodes. So we buy smaller nodes and add them one at a time to bump up the capacity. It lets us scale our capacity and expenses incrementally so we can use our shrinking capex budget more efficiently."

Some of interviewees were aware that hardware solutions were moving away from the active-passive model. However, they seemed unconvinced that the new offerings would match the flexibility of a software-only solution. "With Riverbed Technology in place, it would be hard to make the case [for us] to switch back," one IT manager explained.

New business opportunities as the switching motivator

New technology has always enabled users to expand the realm of achievable possibilities, sometimes in startling ways. From our perspective, the interviews with Stingray solution customers indicated

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distinct opportunities for the businesses that could not exist without having a software-only application delivery solution.

Faster hardware upgrades & hardware reuse

One of the interesting juxtapositions that came out of the interviews was that while customers choose a software solution over a hardware appliance, they still wanted to dedicate the best hardware resources for application delivery. The difference it seems was that Riverbed Technology enabled them to leverage improvements in commodity hardware capabilities at a much faster rate than possible with integrated hardware-software solutions. As one IT manager put it, "The rate of commodity hardware improvements simply outpaces those from the custom hardware guys. There is so much more money poured into making Intel processors faster with more cores, I don't think the custom hardware guys can keep up. So it's better for us to run a software solution on hardware platforms that will improve its performance at faster rates."

> Related case studies:
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He also emphasized that hardware reuse was another significant advantage of software-based solutions. He noted that upgrading his hardware load balancers meant he would be stuck with unusable custom hardware. His only option was negotiating the sale of obsolete hardware to after-market vendors. Rather than continuing on this 'hardware obsolesce' treadmill, he can now reuse vacated commodity hardware for other purposes, such as application development or internal employee applications.

It is generally accepted that higher profitability is possible when businesses can squeeze the most use out of their hardware infrastructure before retirement. Ptak/Noel believes the new opportunity here is in creating a migratory effect — where datacenter applications can be 'upgraded' to better hardware without additional capital expenditures. Enterprises will always be willing to quickly upgrade to the latest and greatest hardware for application delivery solutions. Because other application workloads can now migrate to the hardware resources vacated by Riverbed Technology solutions, IT organizations can deliver application performance improvements to their business without additional expenditures – in essence delivering more with the same. Application workload migration across different grades of processing capacity becomes a new source of IT value delivered to the business.

Migrating business-critical applications to public cloud infrastructures

Many IT organizations are investigating using public cloud infrastructures to lower their datacenter costs. One difficult challenge with any cloud migration is that basic, shared load balancing is not adequate for business-critical applications. Critical business applications depend on application delivery solutions to combine a number of duties (e.g. server persistence, html compression, added security) and provide fine-grained controls for those capabilities. For AlertBoot, educating prospective cloud infrastructure service providers about these dependencies was a drawn out process. "It took a long time for them to understand the full range of our needs. When they finally understood, we found that they couldn't provide 100% of the

> "What we spend on public cloud infrastructure today is comparable to the electric bill for our old datacenters. We're using our budget much more efficiently now."
> Tim Maliyil
> CEO, AlertBoot™

capabilities that we needed and there were issues around change control," said Tim Maliyil, CEO of AlertBoot.

Because AlertBoot's business model depends on proactively managing customer experience SLAs (service level agreements) for a wide variety of applications, controlling changes to the application delivery solution becomes paramount for its IT organization. Making changes to any service provider's hardware is a significant undertaking, AlertBoot would have to submit special change requests to the provider and comply with the provider's change management processes and timeframes. Conforming to the provider's change management process introduced latencies which could jeopardize customer experience SLAs. Additionally, AlertBoot was planning to use several different providers, which would increase the complexity of the change management processes. The only other option for using a hardware-based solution would be deploying it 'just outside' the cloud provider infrastructure – which would be another technologically painful exercise.

The fact that the Riverbed Stingray solution is a software-only solution turned this situation from a costly nightmare into a business opportunity. The AlertBoot technology team had tested Riverbed Stingray suite extensively and determined that the software solution could provide all of the capabilities that they currently had with the hardware solution and provide the same level of performance as the hardware. The key difference was the Riverbed Stingray solution could reside on-premise in the public cloud infrastructure as a virtual appliance. This meant that the team could retain the same level of active control they enjoyed with the hardware solution residing in their privately-owned datacenters. The difference between managing customer applications in a public cloud and managing customer applications in a privately-owned datacenter disappeared because of Riverbed Technology's architecture.
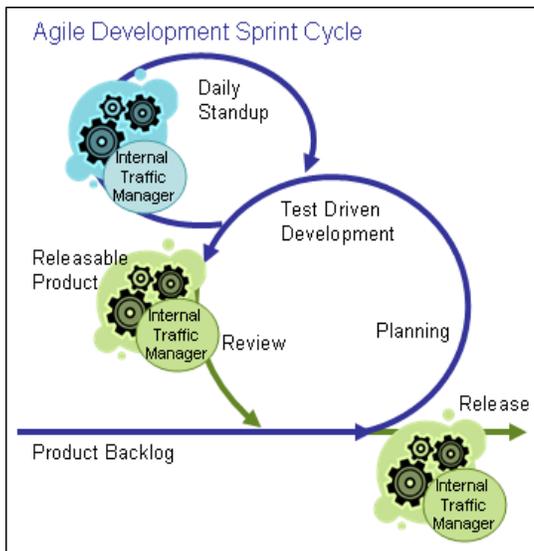
In other words, Riverbed Technology enabled new possibilities for the business. As Maliyil noted, "We couldn't migrate to a public cloud infrastructure without the control Riverbed Technology gave us. A hardware solution would have forced us to refresh our entire datacenter to the tune of millions of dollars … The move to public cloud has been amazing cost saver. What we spend on public cloud infrastructure today is comparable to the electric bill for our old datacenters. We're using our budget much more efficiently now."

Powering business agility

Many enterprises discuss business agility in terms of speeding up development of new web-based services with little discussion of the impact that launching new services will have on operations and infrastructure. However, true business agility is about doing more application changes faster without sacrificing application performance or service quality. The more experience one has managing service quality of constantly changing applications, the clearer it is that increasing collaboration between development and operations is the only way to achieve true business agility.

> "Doing agile development at the speeds we want is not feasible with appliance-based load balancers. Our sprint release cycle is five times faster because of tools like the Riverbed Stingray solution. It makes continuous releases seem more like an achievable goal than just another nice idea."
> Hernan Alvarez
> Senior Director of IT/Operations
> WhitePages™

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When those applications are based on interacting web services, it becomes important to include load balancing expertise and capabilities in that collaboration between development and operations. This is true for the IT teams at WhitePages™, the largest and most trusted online directory. Traffic management is an integral part of designing business logic, developing services and releasing services into production. "Our sprint teams cannot develop and test without load balancing controls so they can define precisely how traffic between web services internal to the application should be managed. This means Operations must provide clean and consistent instances of the load balancer for every application team," explained Hernan Alvarez, Senior Director of IT/Operations

The sprint teams build and rebuild their application stacks countless times before release. With a hardware-based solution, Operations would have to re-image the appliance to the factory standard, implement configuration changes to recreate the clean version needed by each sprint team and then reconnect the appliance to the development network. As Alvarez noted, "With Riverbed Technology solutions, we don't need to do any of those things. We can provide clean versions on-demand and still have time to help out in optimizing the builds. Doing agile development at the speeds we want is not feasible with appliance-based load balancers. Our sprint release cycle is five times faster because of tools like Riverbed Technology. It makes continuous releases seem more like an achievable goal than just another nice idea."

The Final Word

Our goal with this research was to understand the perspective of Riverbed Technology's customers as they made critical decisions about their application delivery capabilities. What we found was a shared viewpoint that their existing hardware solutions limited their ability to change, as if they were 'boxed in' by the integrated hardware-software architecture. The software packaging changed the economics of ensuring positive online experiences with current business services, but more importantly it also expanded their horizons for achieving future business value. From their perspective, the Riverbed Stingray solution provided more flexibility and therefore more opportunities to innovate 'outside the box.'

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About Ptak, Noel & Associates LLC
We help IT organizations become "solution initiators" in using IT management technology to business problems. We do that by translating vendor strategy & deliverables into a business context that is communicable and actionable by the IT manager, and by helping our clients understand how other IT organizations are effectively implementing solutions with their business counterparts. Our customers recognize the meaningful breadth and objectively of our research in IT management technology and process.

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About the Riverbed Technology
Riverbed Technology enables you to create, manage and deliver exceptional online services. Global businesses who demand a flexible, robust and secure web infrastructure use our award-winning software to manage their web-based application traffic. Riverbed Technology allows you to visualize and manipulate the flow of traffic to and from your web-enabled applications. Riverbed Technology gives you the ability to create and deliver new online services quickly and makes those services faster, more reliable, more secure and easier to manage.