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Solution Overview

Delivering LAN performance for VMware Horizon View virtual desktops over the Wide Area Network (WAN)

Accelerating distributed VMware Horizon View environments

Executive summary

Organizations today are faced with the challenge of satisfying both end users and IT organizations – end users require flexible and reliable access to their desktops, data, and applications, while IT organizations need to meet those demands while keeping budgets under control and company assets secure. Faced with these challenges, an increasing number of organizations are turning to desktop virtualization to deliver greater flexibility and reliability to end users while increasing the efficiency and security of managing desktop environments. However, the promises of desktop virtualization are not always easy to realize in complex, real world deployments.

As with most distributed computing models, desktop virtualization may face performance challenges when enterprises attempt to use it to support a globally distributed workforce. Many of the protocols used for desktop virtualization were not originally designed for the WAN and they typically run into two fundamental challenges:

> **At a Glance**
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> Together, Riverbed and VMware enable customers to deliver desktop virtualization solutions that:
>
> - Reduce bandwidth requirements by up to 90%
> - Improve response time for end users
> - Reduce overall IT hardware, software, and IT management expenses
> - Optimize bandwidth and obviate costly network upgrades
> - Ensure complete consolidation with centralized management

- **Bandwidth constraints** – Limits the amount of data transferred or the number of users who can access virtualized desktops
- **Latency** – Delays that reduce application performance

VMware® Horizon View™ offers a purpose-built virtual desktop that provides a positive end-user experience and simplified desktop management, with all the benefits of centrally maintained desktops, applications, and data reduces costs – improved security, and increased availability and flexibility for end users. Riverbed® Steelhead® appliances provide leading wide area network (WAN) and application acceleration technologies that improve the end-user experience over the WAN for Horizon View.

Delivering successful distributed VDI deployments

Inherent performance challenges with the wide area network (WAN), including distance, latency, limited and costly bandwidth, and unforeseeable outages, can result in a poor end-user experience for interactive applications and any IT services. Even with sufficient bandwidth the challenges of latency or outages over the WAN can lead to poor application performance and the inability to smoothly deliver virtual services at remote locations.

Finding a more cost-effective and reliable way to manage desktops in the branch office has become a priority for many organizations. A growing number of organizations view desktop virtualization as an effective approach to streamline desktop and application management while reducing costs, improving security, meeting regulatory requirements, and increasing flexibility and productivity.

Enterprises looking to support branch offices have invested in larger and more costly redundant WAN connections, which often do not deliver a consistent experience to end users as interactive applications can still perform poorly over distance. In addition, local print and application servers that are not centralized with desktops in the data center can slow down end user access to applications and data.

Many organizations are leveraging virtual desktop infrastructure (VDI) to streamline desktop and application management, reduce costs, and improve security and productivity across remote and branch offices. However, small branch offices often have poor connectivity making it difficult to optimize performance for users accessing a wide range of applications across the WAN.

To address this challenge, VMware and Riverbed Technology have teamed up to optimize desktop performance for local branch users with a new Branch Office Desktop (BOD) solution that combines the Riverbed® Steelhead® EX appliance and Granite™ products with the VMware Horizon View Branch Office Desktop. Currently a showcase technology, this joint solution helps bolster worker productivity, drive down costs and ensure maximum uptime for branch office users.

Solution overview

Industry leading WAN optimization – Riverbed Steelhead appliances

WAN optimization is an essential tool in improving the response time and quality of both native desktop and virtual desktop solutions. Steelhead products enable significant improvements in application and desktop performance across the WAN, overcoming the challenge of more reliance on more data across the same old network. They are also far more effective in addressing the root causes of the problem than alternatives such as bandwidth upgrades. Extensive testing has shown that Steelhead products can reduce bandwidth utilization for Horizon View desktop virtualization environments while also improving end-user response times.

Perhaps more importantly, Steelhead appliances enable customers to deploy desktop virtualization in a cost effective manner by optimizing their current network connections. Organizations can avoid expensive network upgrades and improve ROI by using WAN optimization to reduce the impact of added traffic and deduplicating application bandwidth requirements on the WAN. Most TCP applications can save between 60 to 95 percent of their current bandwidth utilization.

Steelhead appliances integrate seamlessly with the Horizon View environment by connecting to the same local area network as the VM infrastructure. When connected to the WAN, the appliances accelerate data transferred between virtual machines and branch office users. Riverbed provides data streamlining for PCoIP USB redirection traffic between the VM and the client attached USB storage. Steelhead appliances reduce data and application traffic on the WAN making room for VDI traffic to flow uninterrupted.
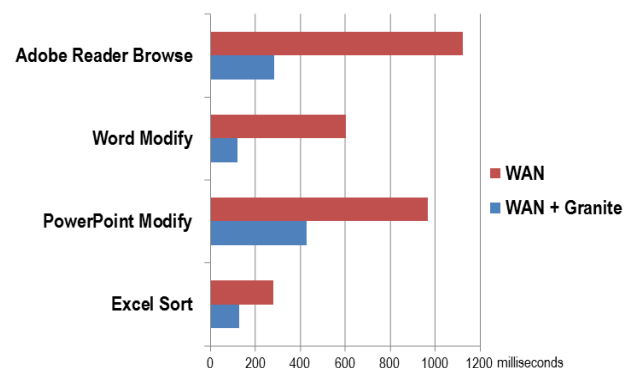
Advanced QoS on Steelhead appliances enables fine-grained identification and control of traffic – including VDI. Through partnership with Teradici, Riverbed has developed the ability to identify traffic within the virtual channels of PCoIP data streams making it possible to individually control virtual desktop activity such as keyboard and mouse movements, screen updates, print, and USB redirection. Horizon View users can apply specific rules individually to each type of traffic to fine-tune and improve the virtual desktop user experience. By properly allocating bandwidth and queuing traffic based on latency sensitivity, the Riverbed QoS engine ensures that activity like print jobs do not starve keyboard or screen traffic and degrade the desktop experience.

When organizations combine Horizon View with leading WAN optimization solutions from Riverbed, IT organizations can improve WAN resiliency, accelerate application response times, and ensure LAN-like performance for View sessions and local peripherals in the branch. This ensures that end users get uncompromised performance and IT is better able to patch, manage, and backup desktops centrally within the data center using a single instance of Horizon View infrastructure.

Riverbed Granite storage delivery

Riverbed Granite storage delivery appliances, extend centrally managed data to distributed end users, enabling IT to fully consolidate branch servers, virtual desktops, applications, and end-user data to the data center, yet deliver services such as VDI to the edge as if they were local. With the Horizon View Branch Office Desktop (BOD) solution, organizations can centrally provision, manage, protect, and project virtual desktops to the branch for local connectivity – all at a lower total cost of ownership. This solution demonstrates how organizations are enabled to maximize uptime, streamline desktop management, and drive down operational costs.

The BOD solution leverages a new architectural approach featuring Granite products that "project" the Horizon View virtual desktops to the edge where they run as if they are local. It works at the storage level and integrates with and extends enterprise data center storage across the WAN. The BOD solution is compatible with storage solutions from industry leaders EMC, NetApp, Dell, and IBM.

Granite appliances deliver local performance for branch office virtual desktops

Even in the event of WAN outages, the BOD solution with Granite appliances enables local performance, ensuring branch user productivity and satisfaction. With the BOD solution users get local desktop performance while IT gets completely centralized management and the ability to manage, patch, protect, and control virtual desktops and data from within the data center.

The Branch Office Desktop solution delivers uncompromised end-user performance with complete centralized control within the data center.

Find Out More

To learn more about how Riverbed and VMware can help optimize performance for virtual desktops visit http://www.riverbed.com and http://www.vmware.com.

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