Riverbed Whitewater Appliances and Dell's vRanger®

Optimize cloud backups of Dell vRanger VM environments

Virtual machine (VM) environments have helped companies consolidate infrastructure and reduce capital and operational costs. As a result, these VM infrastructures introduce new challenges concerning how best to protect and recover them in the event of a disaster. For instance, if the hardware platform hosting the VM infrastructure experiences a catastrophic failure, risk increases significantly since the servers are now consolidated on a single set of hardware.

Data protection of virtual environments is a mature practice, and existing solutions are well-optimized for fast, reliable backup (typically to local disk), followed by migration to tape or virtual tape libraries (VTLs). But traditional backup strategies are always limited by an IT organization's ability to accurately size, trend, source, budget for and manage multiple disks, tapes, and libraries, in different locations around the globe, often on different platforms. Moreover, backup data often needs to be restored to a new and distant location, which strains corporate WAN links.

Many innovative enterprises are turning to cloud storage to meet both backup

and restore demands. Unlike disk, VTL or tape provisioning, cloud storage provides an elastic pay-as-you-go storage pool, which significantly reduces disk and tape costs and eliminates the need to maintain customer-provisioned secondary sites for replication and disaster recovery. Riverbed Whitewater appliances and Dell vRanger tools unlock the benefits of cloud storage for data protection of VMs.

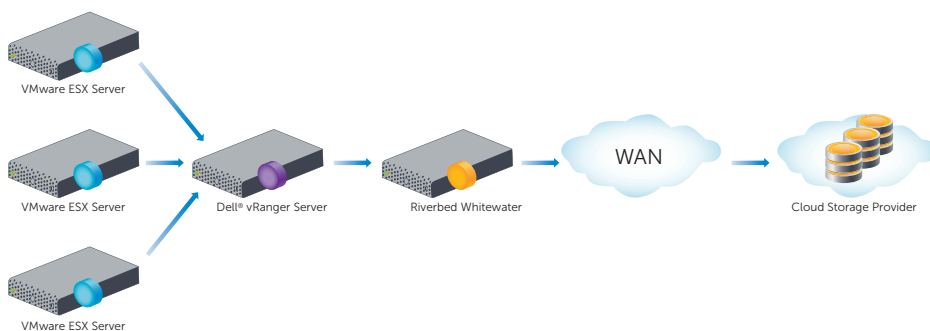## Riverbed Whitewater appliances

Riverbed Whitewater appliances allow organizations to meet cost-reduction and data-management goals by bringing the scalability and reliability of cloud storage to a customer's existing vRanger backup infrastructure. Whitewater appliances are cloud storage accelerators that secure, optimize, and accelerate backup and recovery to the public cloud.

Using Whitewater appliances, customers leverage pay-as-you-go cloud storage services like Amazon S3, AT&T Synaptic Storage as a Service, EMC Atmos, or Nirvanix for off-site storage of backup data and enjoy benefits that include simple configuration, faster data transfers, and built-in security.

> Riverbed Whitewater appliances bring the scalability and reliability of cloud storage to a customer's existing vRanger backup infrastructure.

Benefits
- Allows backups directly to the public cloud
- Provides dual-level security using AES 256-bit and SSLv3 to encrypt data both in motion and at rest
- Enhances data speeds while reducing total storage costs by up to 30 times
- Accelerates data transfer to improve performance

VMware ESX Server

VMware ESX Server

VMware ESX Server

Dell® vRanger Server

Riverbed Whitewater

WAN

Cloud Storage Provider

Typical Riverbed Whitewater and Dell vRanger deployment

> The cloud becomes a secure and reliable backup target or VMDK files, accessed like any other storage target at the customer's site. However, now that backup target can be sized up or down on demand. It can also be capacity-optimized and accelerated when Whitewater appliances are paired with a cloud storage service.

Moreover, implementation is non-disruptive: customers can use the same backup and data protection products they use today (such as vRanger) with the same protocols and the same schedules and procedures. The only significant operational impact will be the time and effort saved by no longer having to manage off-site disks and tapes.

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vRanger for high-speed backups

vRanger is the next step in the evolution of the leading backup solution designed exclusively for the virtual infrastructure. vRanger captures the complete VM image (including the OS, patches, and applications) and transfers the archive (full, incremental, or differential) to a configured data repository. Using the distributed Direct to Target backup architecture, vRanger can backup the data at a very high speed, reducing the backup window.

vRanger is designed to integrate with VMware Virtual Infrastructure and vSphere at the API level, rather than through complicated scripting. With simplified vCenter and ESX Server integration, vRanger can enumerate and display your virtual environment the way you are accustomed to seeing it.

vRanger provides better data protection using fewer resources. VRanger's patent-pending Active Block Mapping technology allows for efficient use of storage and network resources. vRanger's image-level backups allow for simple, portable archives that can be restored with a few clicks of the mouse. The "synthetic restore" technology in vRanger is optimized to eliminate the need for reading redundant data, thereby dramatically speeding up restores. The improved File Level Recovery (FLR) engine lets you browse

archives and recover files directly from the VM images in the archives.

Extend vRanger's backup capabilities to the cloud with Whitewater appliances

Whitewater appliances can greatly reduce the expense and time required to complete offsite backup and restoration jobs with Dell vRanger. This solution pairing enables customers to take advantage of inexpensive public cloud storage over a WAN link (eliminating the need for local storage) and additional backup infrastructure in a distributed VMware environment.

Restoring from disasters typically spans many days to request media retrieval, wait for delivery, search for data that needs restoration, and recover data. With Whitewater appliances, all restores from the cloud use industry-leading deduplication and WAN optimization techniques. Recovery time for anything from a file to an entire VM image or more is reduced from days to hours.

About Riverbed

Riverbed is the IT performance company. WAN optimization solutions from Riverbed liberate businesses from common IT constraints by increasing application performance, enabling consolidation, and providing enterprisewide network and application visibility, all while eliminating the need to increase bandwidth, storage or servers. Thousands of companies trust Riverbed to deliver greater productivity and cost savings by making their IT infrastructure faster, less expensive and more responsive. Riverbed solutions are also available as managed services through select providers. Additional information about Riverbed (NASDAQ: RVBD) is available at www.riverbed.com.

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