

**RIVERBED WHITEWATER  
FREQUENTLY ASKED QUESTIONS**

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### 1. What are Riverbed Whitewater cloud storage gateways for data protection?

Riverbed® Whitewater® appliances are drop-in cloud storage gateways that enable easy access to public cloud storage for backup, recovery, replication, and DR, requiring no change to your existing backup infrastructure. Whitewater can replace cumbersome, slow tape-based systems and expensive, complex, disk-based backup infrastructure to dramatically reduce the cost and improve the performance of data protection.

### 2. What benefits can Whitewater customers expect from this solution?

Four key benefits enjoyed by Whitewater customers are:

- 1) *Cost savings:* Whitewater gateways reduce the management overhead, network bandwidth, and storage that are required for data protection, letting customers realize 30-50 percent cost savings over tape alternatives
- 2) *Simplicity:* Organizations that deploy Whitewater can jettison tape-based backup hardware, software, and cumbersome, inefficient processes for a lights-out solution that requires no collateral infrastructure investment. With a single appliance replacing up to 1 PB of tape, management, infrastructure, and vaulting costs can be slashed and IT resources can be freed up for more value-add activities, in addition to improved recovery point objectives (RPOs) and recovery time objectives (RTOs).
- 3) *Drop-in DR:* Because data is stored in the cloud, there is no need to provision and manage a second site for DR purposes. Should the main datacenter go down, a virtual or physical Whitewater can be deployed to a third-party site and, once the encryption key and cloud account information is loaded, restores can commence immediately. In addition, the virtual Whitewater could be spun up in the cloud itself, where the cloud could be used as the DR site.
- 4) *Cloud effects:* Whitewater also unlocks all the benefits of the cloud for IT administrators in one simple-to-deploy appliance, including pay-as-you grow cost management, instant capacity scaling to accommodate demand fluctuations, greatly simplified capital budgeting, and access-anywhere flexibility to maximize IT efficiency.

### 3. What technical differentiators make Whitewater gateways a compelling solution for cloud storage?

There are four key capabilities built into Whitewater that differentiate it from other cloud storage options.

- 1) *Performance:* Whitewater gateways have been designed specifically to optimize data protection workloads for backup, archiving, and DR, providing a significant performance edge over technologies that also target primary storage.
- 2) *Deduplication:* Whitewater appliances use the industry's most effective inline network and storage deduplication methodology to further increase data transfer performance and minimize the footprint (cost) that backup data will require in the cloud.
- 3) *Security:* Customers using Whitewater appliances get the benefit of dual-layer AES 256-bit and SSLv3 data encryption for maximum data security, both in transit and at rest in the cloud. This is on top of the layers of security wrapped around each provider's cloud storage infrastructure.
- 4) *Integration:* No rip and replace or forklift upgrades are needed in your existing infrastructure to use Whitewater appliances. The Whitewater cloud storage gateway connects simply and directly to all major backup tools at the front end, and all major cloud service provider APIs at the back end, for drop-in, plug-and-play integration.

### 4. In what form factors are Whitewater gateways available?

Whitewater appliances are available as virtual, VMware ESX-based appliance configurations, and as hardware appliance configurations (which vary in local disk cache capacities).

**5. How are Whitewater appliances deployed?**

Whitewater appliances fit into your existing infrastructure by connecting to your backup application on your media server using CIFS or NFS, and to your cloud service provider via the WAN.

**6. How do I enable my Whitewater gateway to connect to my cloud service provider?**

Whitewater appliances have built-in support for Amazon S3, AT&T Synaptics Storage as a Service, Microsoft Azure, Nirvanix Cloud Storage Network, Rackspace Cloud Files, and baseline support for other platforms running OpenStack (Swift) object storage or EMC Atmos. Simply set the appliance drop down menu to your provider, enter your account credentials, and it is ready to backup.

**7. I built an emulator that allows me to receive data from my backup application and translate it to store in the cloud. Is this the same as a Whitewater solution?**

No. The Whitewater solution is much more than a protocol translator between your backup application and cloud storage. It is a full-featured cloud storage gateway. Whitewater appliances receive data from the backup application, deduplicate it, compress and encrypt it, store it on a local cache, translate it to cloud protocols, and then optimize it to minimize transmission time to and from the cloud and storage space needed in the cloud.

**8. What does it mean that Whitewater appliances deduplicate data?**

Riverbed has applied its leading deduplication technology from its Steelhead® line to Whitewater appliances. Because regular backups contain large amounts of duplicated data that has already been backed up, storing that repeated data with each backup is a waste of storage space and bogs down the backup, network, and replication processes. By replacing data already seen in previous backups with a metadata tag, Whitewater gateways reduce your WAN data transmission and cloud storage needs by 10-30 times on average.

**9. What kind of deduplication do Whitewater appliances use?**

Whitewater appliances use inline, variable-length, byte-level deduplication that maximizes the ability to identify duplicate data and reduce storage requirements. Whitewater gateways apply both network and storage deduplication.

**10. What is the benefit of network optimization in Whitewater appliances?**

Riverbed's award-winning network optimization technologies significantly reduce the amount of data that needs to be transferred, and the amount of networking chatter of applications. These technologies simultaneously accelerate data transfers and reduce the bandwidth required for backups to the cloud. Riverbed products provide LAN-like performance over the network while dramatically reducing bandwidth and storage costs.

**11. How does the Whitewater solution preserve the security of my data?**

Whitewater appliances provide dual-level data security by using AES 256-bit and SSLv3 encryption for data both at rest and in transit to minimize risk and maximize the benefits of cloud storage. Data owners manage all security keys, which further enhances security and the speed of disaster recovery.

**12. How does the backup process work with Whitewater appliances?**

Whitewater appliances present themselves as CIFS shares or NFS mounts to your backup software, so the software thinks it is just writing to standard disk. Simply follow your standard backup procedures, choosing the gateway as your backup or replication target.

Data received by the gateway is compared to previously backed up data. Data already seen is replaced by pointers to the first instance of the data, while unique data is recorded in full. The resulting data stream is

compressed, encrypted, and stored, both on local disk cache and in the cloud. Because the Whitewater gateway is preconfigured to support the APIs of cloud storage providers, no extra steps are required to make the data “cloud ready.”

**13. How does the restore process work with Whitewater gateways?**

The restore process is just the reverse of the backup process. Whether a customer needs to restore an individual file or a full backup, a customer’s backup tool sends the restore request to the Whitewater appliance. The appliance then pulls the data from its local disk cache and supplies it to the backup tool, enabling exceptionally fast recovery. If the backup data needed is from an older job that is no longer on the local disk cache, the Whitewater appliance will supplement whatever data is no longer on the cache by pulling backup data from the cloud. The Whitewater appliance’s ability to track the deduplicated data in the cloud minimizes the amount of data pulled in order to satisfy this type of restore.

**14. How much data can I protect with a single Whitewater appliance?**

Whitewater’s advanced data optimization and deduplication technology allows a single appliance to protect up to the equivalent of 1PB of tape backups in the cloud.

**15. What is the purpose of the local disk cache?**

Whitewater appliances use a local disk cache to store the most recent backups. Because most restores are from recent backups, this further accelerates the restore or recovery process. A copy of all data stored in the cache is also stored in the cloud to optimize data protection.

**16. What backup software is supported in Whitewater appliances?**

Today, Whitewater appliances have been qualified as compatible with CA ARCserve, CommVault Simpana, EMC NetWorker, IBM Tivoli Storage Manager, Microsoft SQL Server, Oracle RMAN, Symantec NetBackup, Backup Exec, Quest vRanger, and Veeam. More platforms will be verified over time based on demand.

**17. What cloud service providers are supported?**

Whitewater appliances have built-in support for the APIs from Amazon S3, AT&T Synaptics Storage as a Service, Microsoft Azure, Nirvanix Cloud Storage Network and Rackspace Cloud Files, with baseline support for other instances of OpenStack (Swift) object storage and EMC Atmos. More cloud providers will be added over time based on demand.

**18. Can I switch cloud service providers after Whitewater appliances are installed?**

Yes, as long as the new service is supported by the appliance.

**19. If a disaster occurs at a Whitewater appliance location, how is recovery managed?**

If a data center goes down, an alternate site can be spun up quickly using either a virtual or physical Whitewater gateway. Simply install the new appliance, supply the security keys used by the original appliance at the downed site, point the new Whitewater gateway to the cloud storage location used by the original appliance, configure the backup tool to point to the new appliance, and recover any stored data to the alternate site. To the cloud and your backup software, it looks like you are using the original Whitewater appliance. Whitewater provides an instant, robust cloud-based DR solution.

**20. What differentiates the Whitewater WWA-510, WWA-710 and WWA-2010 appliances?**

The main differences among the family members are throughput and disk cache size.

**21. How is the Whitewater gateway priced?**

There are two components to Whitewater pricing: the appliance and the cloud license. Each appliance comes

with a license for a base amount of cloud storage included; licenses for additional cloud storage capacity can be purchased as and when needed.

## 22. How do I know if my IT environment is right for a Whitewater solution?

The following factors may be considered when evaluating your environment for a Whitewater solution:

- 1) Is your volume or cost of backup data growing too fast for you to manage?
- 2) Are you looking for an alternative to cumbersome, manually intensive tape-based data protection?
- 3) Do you need an alternative to expensive and complex disk-based backup?
- 4) Do you need a simple, comprehensive DR solution for your infrastructure?
- 5) Are you looking for a data protection solution that allows for instant re-provisioning, reduction in capital expenditure, multi-level data security, elimination of manual offsite vaulting, data access from anywhere, and/or high availability?
- 6) Are you using a backup tool supported by Whitewater?
- 7) Does your primary data set size for backup warrant the use of a Whitewater solution? Many parameters contribute to
- 8) whether a Whitewater appliance can meet your backup needs. A Riverbed representative can quickly evaluate your IT environment and determine whether Whitewater appliances are right for you.
- 9) Are you looking for ways to improve your RTO/RPO, or to reduce the cost associated with an existing solution that meets current RTO/RPO targets?

## 23. How can I arrange a demonstration? A proof of concept/trial? Pricing and availability? Potential ROI of using Whitewater appliances? Evaluation of my IT environment for a Whitewater solution?

Contact your Riverbed sales representative or visit [www.riverbed.com/whitewater](http://www.riverbed.com/whitewater) for these details.



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