SOLUTION BRIEF: Riverbed® and ExaGrid®

A Joint Solution by Riverbed and ExaGrid

CHALLENGE:

- **Improve backup at remote sites without costly WAN upgrades**

SOLUTION:

- **ExaGrid cost-effective disk-based backup+Riverbed's wide-area data services**

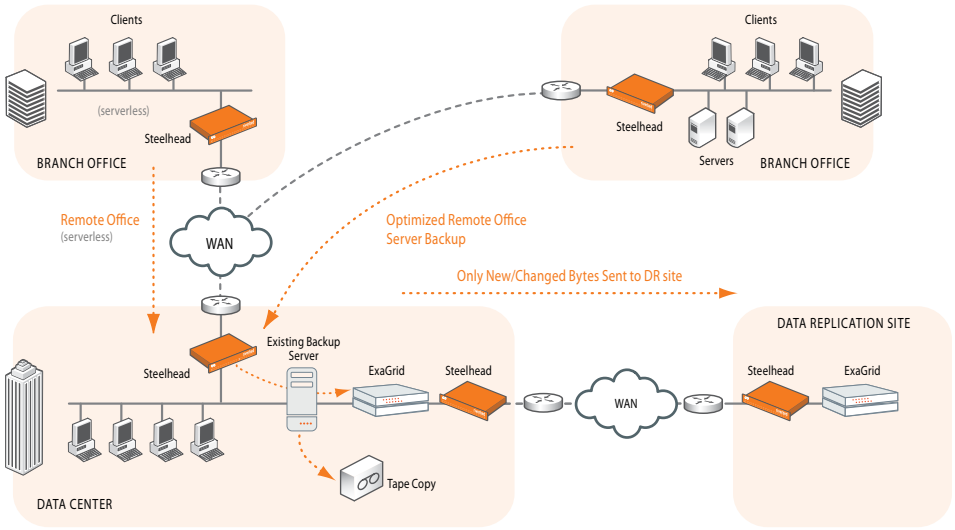
RESULTS:

- **Efficiently consolidate backups to a central site**
- **Cut backup windows by up to 80%**
- **Deploy disk backup at 30% the cost of straight SATA**
- **Speed recovery**
- **Build reliability**
- **Improve security**
- **Faster restores**
- **Off-site replication option to improve diasaster recovery operations**

Centralized Backup and Disaster with Riverbed and ExaGrid

Managing data backup and recovery effectively in a distributed enterprise infrastructure is a fundamental challenge. Wide area network (WAN)-based approaches to data backup and disaster recovery are limited by the performance of the WAN and the storage infrastructure that resides at each site. Bandwidth limitations and network latency can make backup take much longer than is desired or even possible, making such processes ineffective and costly. At the same time, using a standard disk-based backup alternative costs too much for most businesses to deploy a comprehensive backup or disaster recovery strategy. These challenges can make WAN-based backup impossible without significant and costly WAN and storage infrastructure upgrades.

Centralized Backup and Recovery



When critical data is no longer hosted at just one physical location, the challenge of backing up and securing data is painfully magnified. Traditional approaches involve deploying tape backup equipment and processes to each location that hosts the data. That means hiring or contracting local resources to manage these systems at each site. This can be a risky-or even impossible proposition.

Network-based backup, on the other hand, becomes feasible with the combination of Riverbed and ExaGrid. With Riverbed and ExaGrid, there is no need for bandwidth upgrades and IT is able to meet backup/recovery windows. Using ExaGrid system as a disk-based target over the WAN, IT can consolidate and speed up data backup and recovery. The ExaGrid system uses compression and byte-level data de-duplication to ensure lower consumption of disk storage, thereby making itself a viable and cost-effective target for long-term data retention of backup data. In this model, backup data is more secure and also more easily accessible at restore times. ExaGrid enables simplified management of your backup storage needs. ExaGrid's plug and play grid architecture also allows for seamless growth as the data grows:

- Requires no changes to your backup jobs or environment
- Servers virtualize into your existing exaGrid system
- Capacity is automatically available with no configuration or added management

Standard Rotation System Sample

Monday through Thursday: Incrementals on files, Fulls on database, Fulls on emails. Friday: Fulls on everything.

Riverbed optimizes the regular transfer of backup data over the WAN, accelerating backup onto an ExaGrid system by an average of five to 50 times, and even up to 100 times faster in some instances. Riverbed's approach eliminates data redundancy across applications or servers–typically by 60 to 95% while simultaneously addressing the latency constraints of the WAN.

InfoWorld 2007 TECHNOLOGY OF THE YEAR AWARD

Byte and Switch BIG BYTES WINNER 2006

WAN Optimization – Riverbed RiOS 3.0

2006 Network Computing WELL-CONNECTED AWARDS WINNER

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Riverbed and exaGrid simplify and optimize the transfer of data over the WAN for backup and data migration purposes, all at an affordable price point. The combined technologies deliver the following benefits:

- **Eliminate remote office backup infrastructure**
- **The ability to cut backup windows by as much as 80% vs. tape**
- **Low-cost consolidation of local and remote backup data onto a high performing, easy-to-manage and reliable disk-based backup target**
- **Accelerated TCP performance to hundreds of mbps to fully-utilize high-speed WAN links**
- **Simplified and reliable backup replication with the potential to eliminate tape altogether**
- **Increased WAN capacity or deferral of WAN upgrades**
- **Disk-based backup at 30% the cost of standard Sata storage for mid-sized companies and small enterprises**
- **No requirement to change your chosen backup application**
- **Plug and play scalability – a solution that grows with the data without disruption or added complexity**

Sample Matrix of Customer Backup Rotation and Data Volumes Required over Time

	1 TB of Primary Data		2 TB of Primary Data		3 TB of Primary Data		4 TB of Primary Data		5 TB of Primary Data	
Including 2 weeks of nighties	ExaGrid 1TB System	Straight Disk w/ RAIDS Amount of TB Required	ExaGrid 2TB System	Straight Disk w/ RAIDS Amount of TB Required	ExaGrid 3TB System	Straight Disk w/ RAIDS Amount of TB Required	ExaGrid 4TB System	Straight Disk w/ RAIDS Amount of TB Required	ExaGrid 5TB System	Straight Disk w/ RAIDS Amount of TB Required
2 weeks of fulls	Fits	5TB	Fits	10TB	Fits	15TB	Fits	20TB	Fits	25TB
4 weeks of fulls	Fits	8TB	Fits	16TB	Fits	24TB	Fits	32TB	Fits	40TB
6 weeks of fulls	Fits	10TB	Fits	20TB	Fits	30TB	Fits	40TB	Fits	50TB
8 weeks of fulls	Fits	12TB	Fits	24TB	Fits	36TB	Fits	48TB	Fits	60TB
10 weeks of fulls	Fits	15TB	Fits	30TB	Fits	45TB	Fits	60TB	Fits	75TB
13 weeks of fulls	Fits	18TB	Fits	36TB	Fits	54TB	Fits	72TB	Fits	90TB
16 weeks of fulls	Fits	27TB	Fits	54TB	Fits	81TB	Fits	108TB	Fits	135TB

- **Additional capacity can be added for additional retention**

Improve Disaster Recovery Operations

An effective zdisaster recovery strategy requires that all data be stored redundantly at multiple physical locations. In the event of a disaster that destroys primary data, there will be a second copy of the lost data at a different physical location. Implementation of an effective disaster recovery strategy requires a data replication solution capable of transporting large amounts of data over the long distances required for geographical diversity in the data storage sites. It also requires a means to eliminate redundancies efficiently while retaining historical aspects of data. ExaGrid's byte-level data deduplication provides the cost-effective storage management of remote data and reduction of data sent to the remote site. Riverbed's Steelhead appliances minimize WAN costs and dramatically accelerate the complete disaster recovery process. Riverbed's ability to find data commonality across multiple backup images results in dramatically accelerated remote backup jobs and low bandwidth consumption to improve RPO. Together, the joint solution minimizes cost and dramatically accelerates the complete disaster recovery process.

About ExaGrid Systems, Inc.

ExaGrid is the leader in cost-effective disk-based backup solutions. A highly scalable system that works with existing backup applications, the ExaGrid system is ideal for mid-market and small enterprise companies looking to quickly eliminate the hassles of tape backup while reducing their existing backup windows. ExaGrid's innovative approach minimizes the amount of data to be stored by providing standard data compression for the most recent backups along with byte-level data de-duplication technology for all previous backups. Customers can deploy the ExaGrid system at a primary site and at a second site to supplement or eliminate offsite tapes with a live data repository or for disaster recovery.

For more information, contact ExaGrid at 800-868-6985 ext 2 or send us an email at riverbed@exagrid.com.

About Riverbed

Riverbed Technology is the performance leader in wide-area data services (WDS) solutions for companies worldwide. By enabling application performance over the wide area network (WAN) that is orders of magnitude faster than what users experience today, Riverbed is changing the way people work, and enabling a distributed workforce that can collaborate as if they were local. Additional information about Riverbed (Nasdaq: RVBD) is available at www.riverbed.com.

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