

HDS Replication Optimized by Riverbed

The Challenge of Replication Across the WAN

Data protection is a requirement for any organization, and replication is a foundation technology for copying data between data centers. The problem is that replication performance is always limited by the wide area network's (WAN) available bandwidth and latency, constraining how fast data can be moved and often forcing compromises on how much can be effectively protected. Riverbed overcomes these constraints enabling optimized replication so IT organizations can realize the disaster recovery and business continuity strategies they desire, getting the most from their existing network and storage capabilities. Riverbed Steelhead appliances also are qualified by HDS for use with both TrueCopy and Universal Replicator products.

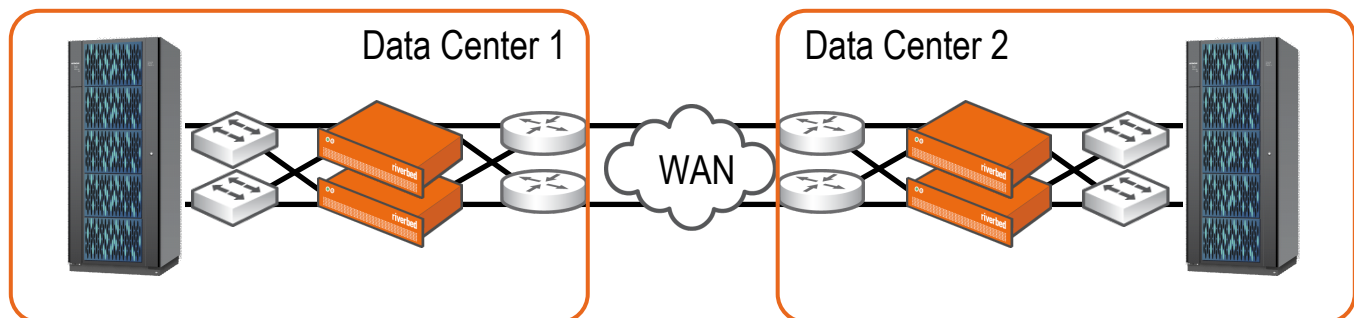
About TrueCopy and Universal Replicator

Hitachi TrueCopy® Remote Replication software provides a continuous, non-disruptive, host independent remote data replication solution for disaster recovery or data migration over any distance. TrueCopy Asynchronous software delivers premier data integrity with minimal performance impact on the primary system: Able to operate at any distance, TrueCopy software supports fast restarts and recovery by ensuring proper database update sequences for each transaction during transmission between enterprise storage systems. Hitachi Universal Replicator software delivers simplified asynchronous data replication across for internal and external storage attached to the Hitachi Universal Storage Platform family. For organizations with demanding heterogeneous data replication needs for business continuity or improved IT operations, Universal Replicator software delivers the enterprise-class performance associated with storage system-based replication, while providing resilient business continuity without the need for redundant servers or replication appliances.

BENEFITS

- Protect more data, in less time, and recover more swiftly.
- Reduce WAN bandwidth requirements for data protection, avoiding network upgrades.
- Enable higher performance for your business continuity and disaster recovery efforts and plans.
- Accelerate distance replication while maintaining application and data integrity.

Typical Steelhead Appliance Replication Deployment Architecture



Steelhead Appliances Improve IT Infrastructure Performance

Riverbed provides a comprehensive platform for WAN optimization for datacenters, branch offices, and mobile workers, delivering enhanced application performance, optimizing bandwidth utilization, and enabling consolidation and virtualization without compromising speed for remote users. Many companies have rearchitected their disaster recovery approaches, too, empowered by Riverbed to eliminate backup operations in branch offices, saving the expense and risk associated with this effort. Beyond these successes, Riverbed has a number of features specifically addressing high end, data center to data center replication. These recognize the unique pressures on the WAN generated by replication utilities and resolve these challenges directly.

Enhancing Replication on the WAN

These are some of the application specific optimizations available in the Steelhead appliance for replication between datacenters:

- Scalable Data Reduction – Memory (SDR-M) enables Steelhead appliances to eliminate 60-95% of the WAN traffic by recognizing repeated patterns of data at a very granular level. Doing this in memory provides even faster throughput than writing to disk.
- Adaptive Compression and Tunable Lempel-Ziv (L-Z) compression can be used to select the approach and find the perfect balance between the additional reduction of new data versus the processing load to do this compacting work. Companies often see 3:1 up to 8:1 compression with Riverbed.
- Multi-core processing takes advantage of the full capabilities of the Steelhead appliance for maximum throughput, even for a single streamed replication job.
- Maximum TCP (MX-TCP) enables replication to fill the WAN pipe, allowing data replication to consume nearly 100% of the rated capacity, but can also be combined with Quality of Service (QoS) if some reservation of bandwidth is desired for other applications.
- High availability configurations let organizations build in the redundancy to avoid any single point of failure in the WAN optimization.

These features add up to deliver to huge improvements in replication performance across the WAN, enabling HDS TrueCopy and Universal Replicator to protect more, in less time, and recover more swiftly. Customers using HDS and Riverbed products together have now have the power to achieve the data protection and business continuity solutions they need.

About Riverbed

Riverbed Technology is the IT infrastructure performance company. The Riverbed family of wide area network (WAN) optimization solutions liberates businesses from common IT constraints by increasing application performance, enabling consolidation, and providing enterprise-wide network and application visibility – all while eliminating the need to increase bandwidth, storage or servers. Thousands of companies with distributed operations use Riverbed to make their IT infrastructure faster, less expensive and more responsive. Additional information about Riverbed (NASDAQ: RVBD) is available at www.riverbed.com



Riverbed Technology, Inc.

199 Fremont Street
San Francisco, CA 94105
Tel: (415) 247-8800
www.riverbed.com

Riverbed Technology Ltd.

Farley Hall, London Rd., Level 2
Binfield
Bracknell, Berks RG42 4EU
Tel: +44 1344 354910

Riverbed Technology Pte. Ltd.

391A Orchard Road #22-06/10
Ngee Ann City Tower A
Singapore 238873
Tel: +65 6508-7400

Riverbed Technology K.K.

Shiba-Koen Plaza, Bldg. 9F
3-6-9, Shiba, Minato-ku
Tokyo, Japan 105-0014
Tel: +81 3 5419 1990