

Riverbed optimizes Data Domain replication

Challenges in protecting large volumes of data

Data Domain has become a popular backup storage vendor for their Global Compression which has the ability to deduplicate redundant data, effectively reducing the volume of secondary storage that must be purchased and managed. As organizations are stretched to deliver ever increasing amounts of data, meet high standards of data protection, and control their spending, the ability to cut back on unnecessary redundancy has proven valuable. Primary storage in disk arrays is copied to Data Domain's secondary storage, efficiently providing resiliency for "data at rest." To further protect the data from a site disaster, it is usually copied with Data Domain Replicator to another array in a remote facility.

The challenge arises in this replication across the wide area network (WAN), as constraints of bandwidth and latency conspire to limit the speed at which "data in flight" can be transferred. This often has the undesirable effect of forcing choices of upgrading the WAN (incurring new ongoing operating expenses), or protecting only a subset of data (exposing companies to increased downtime and possibly permanent loss of important information.)

And even upgrading the WAN bandwidth may not overcome the delays caused by latency if the replication covers a long distance. So what can be done to address this problem?

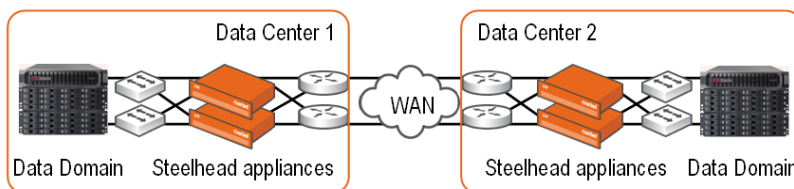
BENEFITS

- Protect more, recover faster
- Reduced bandwidth requirements and make room for other applications
- Additional "deduplication" of data in flight

Making a good approach even better

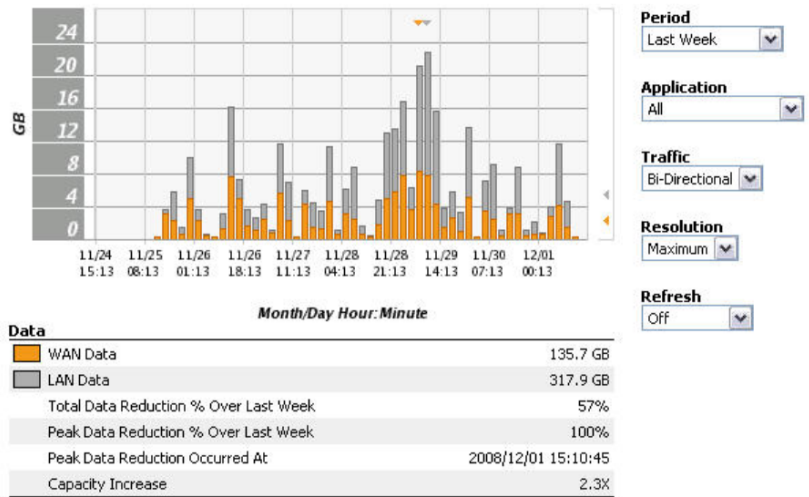
Steelhead® appliances from Riverbed Technology use a variety of ways to optimize traffic on the WAN, including deduplication. Many people wonder if data streamlining from Riverbed helps in this case, considering that Data Domain may have already deduplicated the data in the storage. The answer is that the finer granularity by which Steelhead appliance perform data streamlining has been shown to provide significant incremental reduction, ranging from 15-75%. A Data Domain array will scan data for repeated patterns with variable block sizes, this is usually done in around 4 - 8 KB (4096 - 8192 byte) chunks. Riverbed will look for matches in 128 byte segments on average, an approximately 32 - 64 times more fine grained approach. Thus Riverbed WAN optimization working with Data Domain deduplication clearly is effective in further reducing the WAN requirements for replication, a combined approach that can take as much as 99% of the traffic away. By using these complementary solutions together companies can protect more data, in less time, and save on networking expenses too.

Typical Steelhead Appliance Deployment Architecture

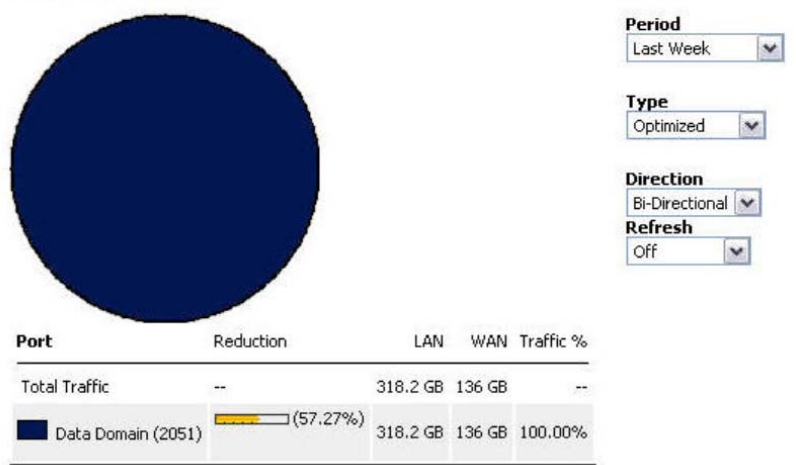


The diagrams below illustrate the added benefit of bandwidth optimization, in this case an average 57% incremental reduction of WAN traffic, with a peak of almost 100%, from using Steelhead appliances with Data Domain Replicator, above and beyond the reduction from Global Compression. These are real world results from a customer's production environment, where the capacity of the existing WAN was effectively increased 2.3x.

Bandwidth Optimization



Traffic Summary



WAN optimization from Riverbed is therefore a complementary technology to Data Domain replication, and one that offers the added benefit of freeing up significant bandwidth for use by other business applications too. Customers can gain distinct performance improvements and more efficiently utilize the WAN, giving them more protection and potentially reducing or avoiding ongoing network expenses.

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



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