TRUE WAN OPTIMIZATION IS NOT DEDUPLICATION

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BRIDGEWORKS™

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The four walls of the data center no longer confine users, applications, and data. Organizations are multi-site, and users want to work from anywhere. Making "work from anywhere" a reality still requires data and data still has gravity. Data has to move to the organization's various offices and into the cloud. Data movement requires WAN bandwidth, and while bandwidth speeds have increased, the speed of light has not, latency as well as packet loss, are still critical factors in WAN performance.

Deduplication is not WAN Optimization

Most WAN optimization solutions leverage deduplication and compression to improve WAN performance. The problem with counting on data efficiency technologies to improve WAN performance is that they do not improve WAN performance; they improve data efficiency. Moving less data is not the same as moving data more efficiently, and of course, data efficiency technologies require redundant data to work. Data efficient WAN solutions do little if anything to optimize the on-the-wire performance of data transfers.

Data and Data Needs Are Changing

Another problem facing WAN optimization solutions that count on data efficiency is that data itself is changing. While redundancy between datasets indeed exists, the gain as a result of the optimization is decreasing. Data sets are becoming more vibrant, full of video and audio. Video and audio already have optimizations built into them. Attempting to compress them typically has no effect or in some cases makes them larger. There is also almost no redundant data in rich data. Another problem is encryption. Where encryption is applied in the data lifecycle has a direct impact on the deduplication efficiency.

Fixing the WAN

WAN connections, as they get further from the source, introduce latency. It doesn't matter how much bandwidth is available, as distance increases so does the chances for packet loss, which requires a retransmission. The key to getting the most out of the WAN is to work around both of these issues.

The first step is to increase the parallelism, which means sending more data over the network at the same time from different sources. An efficient WAN optimization solution will increase parallelism even from a single workload. The second step is to set transfer packets size to reducing the frequency of packet retransmission. The problem with optimizing packets is that the "right" packet size constantly changes on a WAN.

Introducing Bridgeworks—True WAN Optimization

Bridgework's core technology enables organizations to achieve almost maximum bandwidth utilization despite any potential latency. They accomplish this by creating a high level of parallelism and by optimizing packet size for the given state of the WAN. The solutions use an artificial intelligence engine to analyze the condition of the WAN connection continuously to determine the optimal packet size along with the level of parallelism so the minimum number of packets needs retransmission but at the same time maximizing the data throughput.

The AI is self-learning, managing and configuring. IT doesn't have to make any changes to existing applications or workflows nor do they have to install agents. The Bridgeworks solutions don't touch data, and they optimize any data type; deduplicated, encrypted or compressed.

Bridgeworks designed its WANrockIT product for optimizing data transfers of iSCSI, Fibre Channel and SAS data streams. Imagine a disaster recovery storage system, halfway across the country that is almost entirely in sync with the primary system.

The Bridgeworks PORTrockIT product optimizes TCP-IP streams. Protocols like Object, S3, NDMP, REST, NFS and applications from Veritas, Commvault, Spectrum Protect, and Veeam can use PORTrockIT to rapidly update secondary copies or make concepts like follow the Sun workloads now a reality.

Bridgeworks also has a product for Amazon Web Services (AWS) using the same intelligent engines to control cloud data flow, accelerating the movement of data into and out of the Amazon Cloud. Businesses typically see more than 10x improvements on the performance of data movement to/from the cCloud irrespective of compression or encrypted data formats.

Bridgeworks solves the WAN problem so differently, it may be time for a new category, instead of WAN optimization, Bridgworks' delivers WAN Data Acceleration.

StorageSwiss Take

Users and organizations demand data be available everywhere. Achieving a data-everywhere goal requires optimal use of the WAN connection. To date, most of that optimization has centered on reducing the amount of data that traverses the WAN, not on enabling the WAN to achieve its full potential. If data optimization is the only option, then there is no need to invest in increased bandwidth, especially at a distance.

Optimal investment in WAN bandwidth requires a focus on making the transfer better. Parallelism is an essential first step, but full optimization requires intelligent parallelization together with packet sizing. Bridgeworks delivers precisely that, enabling organizations to maximize their WAN investments.

The Firm

Storage Switzerland is the leading storage analyst firm focused on the emerging storage categories of memory-based storage (Flash), Big Data, virtualization, and cloud computing. The firm is widely recognized for its blogs, white papers and videos on current approaches such as all-flash arrays, deduplication, SSD's, software-defined storage, backup appliances and storage networking. The name "Storage Switzerland" indicates a pledge to provide neutral analysis of the storage marketplace, rather than focusing on a single vendor approach.

About Our Partner

Bridgeworks' expertise in optimisation of data performance stretches back over 35 years. Bridgeworks industry defining Data Acceleration technology is re-defining Networks enabling organisations to reach transfer speeds up to 200x faster, whether large volumes, encrypted or media files. Using Automated, AI technology Bridgeworks dramatically alleviates the effects of latency and packet loss, meaning that data can get to where it needs to be quicker and maximising business performance with dramatic ROI.

The Analyst

George Crump is the founder of Storage Switzerland, the leading storage analyst focused on the subjects of big data, solid state storage, virtualization, cloud computing and data protection. He is widely recognized for his articles, white papers, and videos on such current approaches as all-flash arrays, deduplication, SSDs, software-defined storage, backup appliances, and storage networking. He has over 25 years of experience designing storage solutions for data centers across the U.S.