Across Continents, Close to the Chest

Media production firm implements successful intercontinental data protection plan

By Randy Shiozaki

INTRODUCTION AND BACKGROUND

Data backup is typically the bane of most IT departments' existence; a necessary evil, if you will. While it can often be a mundane process that's a drain on IT resources, it is in fact a vital part of any company's business continuity or disaster recovery plan, and often having a foolproof backup system in place is essential for complying with regulations like Sarbanes-Oxley and HIPAA.

Throw in the fact that over 30% of a business' critical data resides in remote offices, and the challenge to carry out effective backup grows increasingly difficult. Data protection at remote offices using local tape-based backup solutions requires local staff to monitor the backup process, swap tapes and perform restores as necessary. Due to a company's cost considerations, however, this local staff typically does not end up having sufficient time or appropriate training to manage backup/restore systems effectively; all too often, personnel whose core competency is not even IT gets tasked with backup responsibilities, and priority for these critical functions gets de-emphasized accordingly. As a result, much of a company's remote data goes unprotected.

So it all boils down to this: Ask any IT executive or business owner, and he or she will tell you that the ideal backup process would be one that is virtually automatic and self-maintaining, transparent and completely reliable; one that does not soak up skilled SysAdmin resources and can enable instantaneous "without a hiccup" recovery to and from any remote location.

Through leading broadcast and interactive design firm Red8 Studios's unique story about how it overcame a significant data protection challenge, we will analyze today's emerging approaches to data backup that are raising the bar toward the vision set forth above.

SITUATION AND ANALYSIS

Red8 Studios provides graphic design and multimedia creative services to the global entertainment, media and technology industries, having designed such recognizable images as the TiVo character for the launch of TiVo's DVR technology, several of the program logos broadcast every day on the Food Network and EA Sports' ubiquitous brand image, to name a few.

The company, however, is in a unique and challenging position with regards to data protection. Its offices are located in Los Angeles and China, with operations occupying the Los Angeles office and the bulk of its graphic design and production activity occurring in China. Furthermore, Red8 creates data that poses a particular storage challenge because complex artwork and multimedia files, its medium, are very large and are in a constant state of flux throughout the creative process.

The crux of the issue, however, rests on the fact that Red8 needs assurances to protect its data against potential disaster at one of its production offices in China, whether through natural, man-made or political causes. The reams of creative data, considered by its clients to be vital intellectual property, must make it through such an event safe and sound.

Over the years Red8 has tried all kinds of methods, including mirroring its servers. This turned out to be costly, unreliable and unmanaged because the company didn't have adequate IT resources to oversee it properly.

Eventually, they purchased several external "fire-wire" storage drives (250 and 400 GB), saved the data locally, then took the drives physically to an outside facility for safekeeping. The problem with this method, however, was that it was not easy to get personnel to adopt a regimented system for saving backups of their work to the external drives; moreover, they were accumulating drives at a rapid clip.

Finally, Red8 realized that the only way to provide adequate assurance that its data would be protected was to fully backup its production data remotely to a disaster-proof facility located on U.S. soil. However, the extreme complexity and richness of Red8's data, combined with its dynamic and constantly changing nature created a real bugbear: The company was facing serious investment in network infrastructure to make it happen.

In order to back up to a facility clear across the globe at least once every 24 hours, new dedicated, long distance, high-bandwidth connections were going to be necessary, and backing up to the U.S. was looking to be cost-prohibitive.

The scenario, while extreme, is really not much different than a situation in which many companies find themselves mired; Red8 is simply a microcosm for persistent backup issues, particularly when companies are trying to protect remote offices. Issues such as backup storage inflation, backup unreliability, inability to fit the backup into a specific time window and insufficient bandwidth "pipelines" for the backup all contribute to the problem.

Traditional backup has no mechanism to prevent duplicates, triplicates, etc. and often involves a tremendous amount of processing within dedicated backup servers. It is not uncommon for organizations to require up to ten times the volume of storage capacity for backup data as they use for primary data, even after only two months of backup. Moreover, traditional backup must reformat files for writing to tape, and then transmit the reformatted files to the physical media. Tape drives are prone to mechanical

failure, backups can easily exceed capacity and oft-handled media has a greater chance of failure. It is little wonder that up to one fifth of traditional backups and one third of attempted recoveries fail.

A NETWORK-BASED SOLUTION

After months of hand-wringing, Red8's management team turned to ViaRemote, a network-based backup and recovery service from Arsenal Digital Solutions. The fully-managed, on-demand service pulls data from servers, PCs and laptops located anywhere on a company's IP network and backs it up to a secure, highly available off-site storage facility. From Red8's standpoint, the key to the solution is its ability to identify commonalities among data at the byte level and filters out unnecessary redundancy before sending it over the network to the backup facility. The filtration process, which is exponentially more efficient than previous technology, allows Red8 to protect its distributed offices at great distances over even the most congested public Internet. Today, Red8 is leveraging public network connections between China and the U.S. to accomplish remote backups literally across the globe.

The solution reduces the volume of backup data at the source by identifying changes to constituent parts of files, and then backing up only the changed information at the sub-file level. Once the initial system backup is complete, subsequent backups take place quickly using negligible connectivity bandwidth and a fraction of additional storage beyond the amount used to store the primary applications and data.

Instead of compressing and storing each and every file, the solution stores repeated data sequences once, whether those sequences occur within files, across different systems or over time. The technology reduces backup storage required by up to 90%, facilitating frequent backups, even of daily changing databases. The extremely low change factor minimizes backup traffic on networks, sometimes by 99%. As a result, Red8 needs only to transfer one to two percent of the data it actually creates on a daily basis in order to ensure total backup for complete restoration, again over even the most congested public Internet.

BONA FIDE RESULTS

In one stroke, Red8 has eliminated its legacy remote office tape and external drive media, reduced its backup administration needs and solved its network bandwidth limitation challenges. Red8 was able to leverage its existing network investments and did not need to add additional bandwidth or infrastructure. Backups are performed over the public Internet to a secure facility in North Carolina according to Red8's selected backup schedule.

The solution eliminates any need for Red8 to "babysit" the backup, handle media or install and administer a Storage Area Network. Because it is a pay-as-you-go service, it is extremely cost-effective in addition to being ultra-efficient.

In the event of a disaster or data-loss event at one of its offices, the company can easily restore its files to an unaffected office or third party location using an intuitive, online interface and continue operations, without a hiccup. Recovery from *yesterday's* backup is *always* possible.

Finally, a completely unexpected yet extremely important side-benefit to implementing network-based storage services is that Red8 gained material competitive advantage on the business development side of the house. Red8 can explain to prospective clients that, while the creative production takes place 8,000 miles away, all data gets backed up and secured at least once every 24 hours to a disaster-proof facility in the United States.

That's a huge comfort because the files that Red8 produces literally become clients' intellectual property and they will not stand for their intellectual property to be left vulnerable to loss or nefarious parties. To date, this aspect of its business model has helped Red8 obtain a number of clients that otherwise may not have retained its services.

The Red8 Studios story demonstrates that technology is making fast, cost-efficient, convenient and consistent data protection across remote locations a reality, even from one end of the globe to the other.

The Red8 Studios story demonstrates that technology is making fast, cost-efficient, convenient and consistent data protection across remote locations a reality, even from one end of the globe to the other.

NaSPA member Randy Shiozaki is an executive Producer and Partner at Red8 Studios. He is part of the firm's management team and is responsible for solving key technology issues on an ongoing basis.