Fujitsu Statement
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As the amount of data grows exponentially, so too does the value of a data storage strategy that's customized to fit your business needs
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The massive proliferation of data and the need to backup and secure all of an organization's content puts a strain on the organization's IT infrastructure. Data deduplication technology promises to enable better performance and more efficient storage. But, says Fujitsu's Hans-Dieter Wysuwa, data deduplication technology alone may not be the best fit for all of an organization's data storage needs.

It's no surprise that backup data storage is expanding, though it can be shocking to look at the actual figures. According to Forrester Research[1], the average enterprise server backup data store grew by 42 percent between 2010 and 2012, while file storage grew by 28 percent. In 2012 alone, the average company was maintaining over 3,000 terabytes of data. Overall, nearly 75 percent of all the data stored in the enterprise is backup data.

That's why, when thinking about ways to save on your IT budget, consider your backup strategy. It's important to select the most affordable solution that still meets all your data protection requirements, such as the ability to scale up as your backup data needs increase. One common solution is to use data reduction techniques. Data deduplication can be a very effective data reduction technique in backup environments designed to eliminate duplicate copies of the same data.

In simple terms, take an example where two users have identical copies of the same file on their local drive. Data deduplication ensures that only one copy of the file is backed up, though both users have access to this file when needed for data recovery. In this example of two users sharing one identical file, data deduplication can reduce storage needs by 50 percent.

Of course things get more complicated in a real-world situation. Still, if the data structure allows, the benefits of data deduplication are significant. Deduplication can lower IT costs by using less disk space to store backup data, and help speed up backups and recovery.

But it's not always that simple. Deduplication can increase performance when backing up and restoring small data sets, namely single files. But what about large data sets, such as the recovery of entire databases? What about backup/restore processes for upper mid-size to larger enterprise organizations that use a combination of both disk and tape? What about 24/7 IT environments that require fast and reliable availability? And what about data that's not well suited for deduplication because it's already compressed, encrypted, or unique? In these cases, deduplication can lead to a significant decrease in performance.

Moreover, an organization's data storage does not stop at backup. Backup takes care of the need to ensure recovery in case of data loss. And this process is an active and ongoing one. When files are modified, they need to be backed up – usually on a monthly, weekly, daily, or even hourly basis – to preserve the changes.

But organizations also need to archive data, and this process is more for compliance purposes and long-term storage of inactive data – files that are no longer being modified – than for data recovery. Archiving involves moving final data files from a production storage system to less expensive storage, in many cases from disk to tape. This allows an IT department to lower backup storage costs and free up storage space on production systems.

While deduplication can reap benefits for an organization's data backup strategy, the technique is not needed, for the most part, for data archiving. In fact, deduplication can be an unnecessary burden for archiving, adding costs in performance, maintenance, and total cost of ownership. In addition, deduplication is not a good idea for compliance archiving, where it is critical to retain the original files and prevent modifications to those files.

IDC's latest end-user survey of enterprises[2] highlights a growing demand for backup, archive, and replication software, indicating increased investment levels in backup and archive. The research found that many companies with 50 or more employees are using tape in their environment and only a small proportion are planning to eliminate tape in the near future. IDC believes that tape will be around for the long term, primarily as an archive medium, even while disk-based systems are deployed for faster backup and recovery.

It's clear that data deduplication has its advantages, but there are also several pitfalls. It can be a complex process integrating it into an

organization's data storage infrastructure. As with many technological solutions, one size seldom fits all. Each company presents a unique mix of IT systems, processes, employee and customer needs, geographic presence, corporate culture, and other factors.

For this reason, it's important for decision makers to leverage the resources and expertise of a trusted partner. Due to our comprehensive portfolio (including market leading products from partners), Fujitsu can provide the best individual solution and serve as a single contact each step of the way, through planning, deployment, maintenance, and expansion.

For the data storage needs of small to mid-size companies, Fujitsu's ETERNUS CS800 appliance is a pure data deduplication solution, providing the option to replace tape backup when it makes sense. The ETERNUS CS800 stores all backup data to disk with deduplication to reduce the required disk storage capacity. In addition, it is still possible to write a copy of the data to tape in a non-deduplicated (original) format, or to replicate the data to another ETERNUS CS800 appliance, to provide cost-efficient disaster recovery.

For larger mid-size to enterprise companies that require a unified data protection strategy, Fujitsu's ETERNUS CS8000 combines all current storage technologies (disk, deduplication disk, and tape) in one solution. This approach, which is unique to the industry, provides the best of all methods – backup to disk, a highly automated backup to-disk-to-tape (in which all of the data is first saved to hard drives as a speed-matching buffer, then later transferred to tape), and an enterprise-class implementation of scale-out deduplication (which allows expansion of the system to increase performance when the need arises).

Companies choose the ETERNUS CS8000 appliance if they have high requirements on the availability of data and/or if they have complex data-protection environments and want to save expenses with consolidation and automation. The ETERNUS CS8000 can serve as a data backup or archive target, or both. The results are increased performance, scalability, availability (in terms of data recovery), and flexibility at a lower total cost of ownership

As you approach your data backup/archiving decision, consider that Fujitsu, because of its range of data storage solutions, can provide advice on what solution best fits your individual requirements. The amount of data storage and the complexity of the storage processes might be growing. But the right partner can ease the burden with an end-to-end portfolio that ensures your organization is well placed to balance short- and long-term objectives and address its own unique mix of requirements.

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High-resolution portraits are available at:
http://mediaportal.ts.fujitsu.com/pages/search.php?search=wysuwa

Royalty-free photography of the ETERNUS CS 800:
http://mediaportal.ts.fujitsu.com/pages/search.php?search=CS800

Royalty-free photography of the ETERNUS CS 8000:
http://mediaportal.ts.fujitsu.com/pages/search.php?search=cs+high+end

[1] "Backup data growth is out of control, make sure you have the right tool to manage it!"
Rachel Dines, June 28, 2013
http://blogs.forrester.com/rachel_dines/13-06-28-backup_data_growth_is_out_of_control_make_sure_you_have_the_right_tool_to_manage_it

[2] "Meeting Backup and Archive Challenges – Today and Tomorrow"
Nick Sundby and Donna Taylor, October 2013
http://globalsp.ts.fujitsu.com/dmsp/Publications/public/wp-idc-data-protection-ww-en.pdf