

Dell™ PowerVault™ DL Backup to Disk Appliance powered by Symantec™ Backup Exec™ 2010 R3 dramatically reduced backup time and data storage needs in a virtualized scenario



compared to disk-based backup without deduplication



Companies of all sizes are looking to move away from traditional inefficient and costly backup technologies. Such methods back up data indiscriminately, failing to differentiate between new and previously saved data. This is particularly problematic with remote offices, where the dutiful transfer of all backup data to the central office wastes time, WAN bandwidth, and storage resources. By comparison, source deduplication methods back up only changed or new data to the central office, saving time, improving bandwidth utilization, using storage more efficiently, and thus lowering storage costs.

Symantec Backup Exec 2010 R3 includes powerful source deduplication technologies that let companies back up their data efficiently. Symantec Backup Exec 2010 R3, combined with the Dell PowerVault DL Backup to Disk Appliance, is a full-featured data protection solution that eliminates the waste of less efficient systems.

We measured firsthand the advantages that the Dell-Symantec solution delivers when using source deduplication to back up databases, mail, and other files running on Microsoft® Hyper-V™ virtual machines. The solution drastically reduced both backup time and data storage needs in our tests, compared to data backup without source deduplication. For instance, in our file server virtual machine testing, we experienced an average deduplication ratio of 32.3 to 1. We also experienced an average time reduction of 3 hours to complete the backup. Because Symantec Backup Exec 2010 R3 backs up the entire virtual machine (VM) and all associated virtual disks, we have found that timing and deduplication ratios are even higher in the Microsoft Hyper-V testing scenarios than in a stand-alone application-server testing scenario.

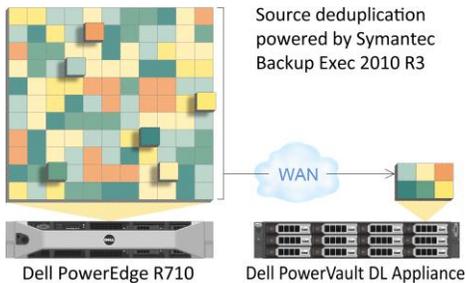
These results show the types of storage and time savings that the Dell-Symantec solution can deliver.

To read the full report, visit

http://principledtechnologies.com/clients/reports/Symantec/Virt_BackupExec2010R3_0711.pdf.



DATA BACKUP 101: SOURCE DEDUPLICATION EXPLAINED



Source deduplication eliminates backup inefficiencies by transferring only unique blocks of data across the WAN.

Source deduplication offers an efficient way for companies to back up their data. After an initial full back up, deduplication software searches for duplicate data in subsequent backups and then only backs up blocks of data that are new or changed. “Source” means the data is deduplicated at its source, likely a server or desktop at a remote location, before it is passed to the central backup site.

Because the large majority of data typically remains constant from day to day, transferring only new or changed blocks of data from the remote office to the central office with source deduplication is the wise choice when bandwidth, time, and space are at a premium.

THE DELL-SYMANTEC ADVANTAGE

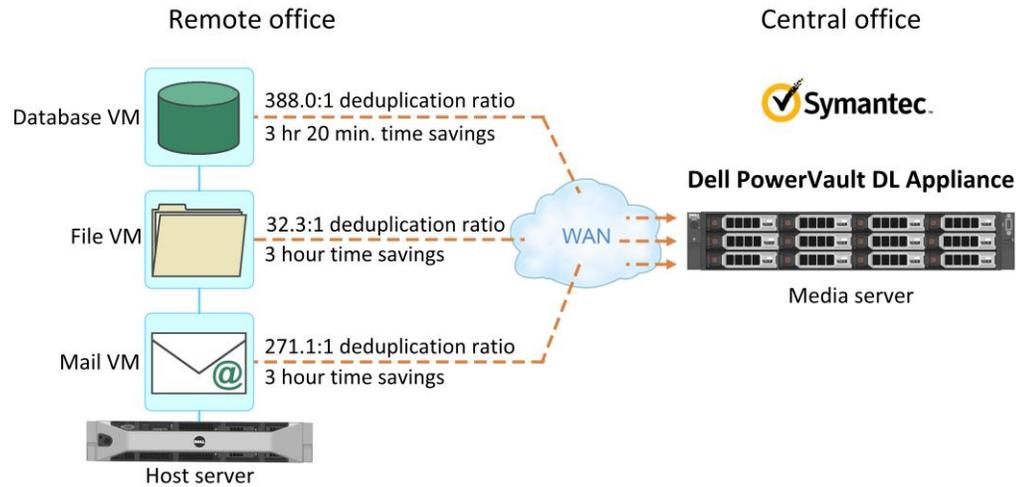
Dell and Symantec have partnered to offer an integrated disk-based backup solution. Symantec Backup Exec 2010 R3 is already fully installed on the Dell PowerVault DL Appliance, and an automated setup wizard guides you through setup, configuration, and deployment. This solution offers features such as granular recovery (allowing you to back up specific files without running a full restore) and remote backup, monitoring, and maintenance. For a full list of features, see <http://i.dell.com/sites/content/shared-content/data-sheets/en/Documents/ss703-powervault-dl-backup-to-disk-appliance-symantec.pdf>.

LESS DATA SAVED, LESS TIME SPENT

By deduplicating the data at the source, the Dell-Symantec solution was far more efficient than disk-based backup without source deduplication, which we also tested. The Dell-Symantec solution reduced the amount of data traveling over the WAN by a factor of more than 32 when backing up a file server virtual machine and even more when backing up the database-and mail-server virtual machines.

By backing up only new data, the Dell-Symantec solution reduced the database backup window from over 6.5 hours to an average of around 3 hours, reduced the file server backup window from over 6 hours to an average of 3 hours, and reduced the mail server backup window from over 6 hours to an average of 3 hours.

Figure 1: The Dell PowerVault DL Appliance powered by Symantec Backup Exec 2010 R3 made good on its promise to significantly reduce the amount of data storage and time needed during data backups.



The Symantec Remote Agent compared the data on the remote server to the existing backup data on the media server. When it found a duplicate, it sent only a marker to the media server at the central office. As a result, the remote server transmitted far less data to the media server. This not only saved WAN bandwidth, but also decreased the volume of data the media server had to store—both of which add up to savings. In a straightforward process, we used the Symantec Backup Exec console to simply select the deduplication storage folder and select the option for remote access of the media server while configuring the backup job.

The difference between the volume of data and the volume of data actually stored increases over time, benefiting the business by requiring significantly less long-term storage capacity.

Database server backup scenario

The initial complete database backup took almost 5 hours. Subsequent full database backups using source deduplication took an average of 3 hours and 13 minutes, achieving a deduplication ratio of at least 179.8:1. For comparison, we ran a single backup using a backup-to-disk storage device on the Dell PowerVault DL Appliance without source deduplication, which took roughly 6 hours and 41 minutes.

Figure 2 shows the comparison of protected data versus actual deduplication data stored for our virtualized database server scenario.

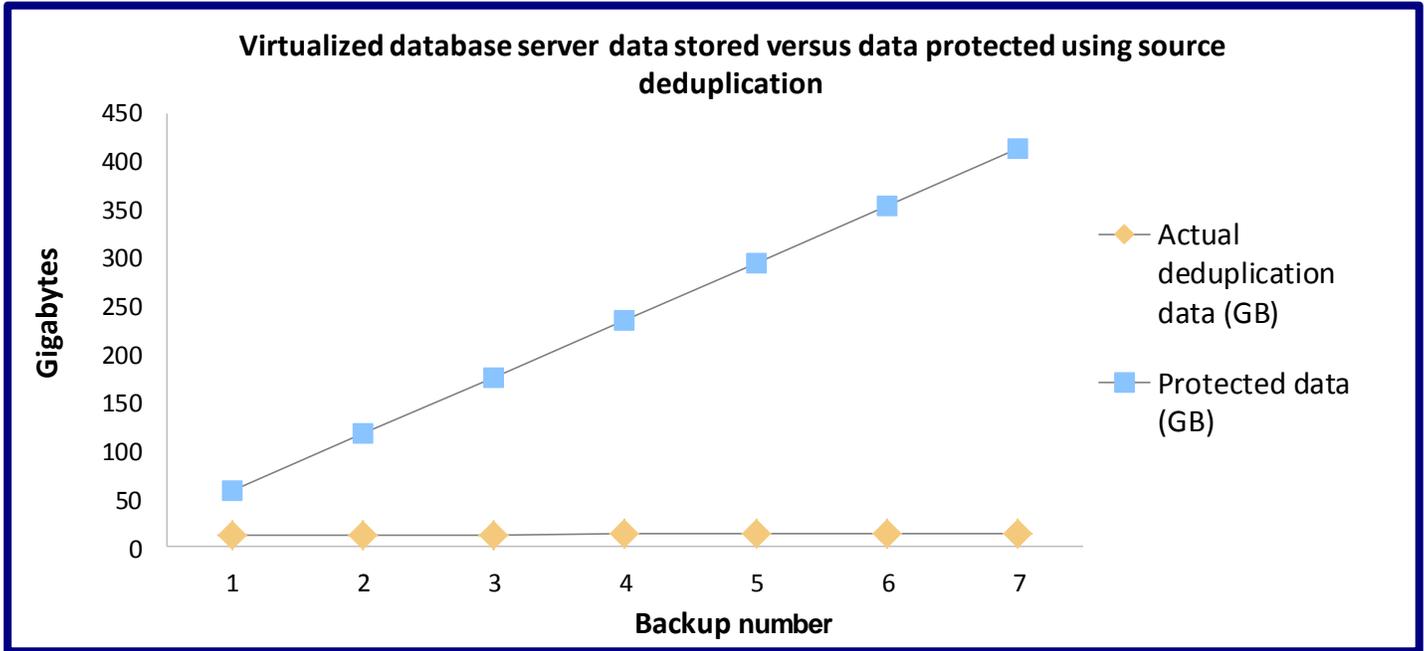


Figure 2: Comparison of protected data versus the actual data stored from our 7-day database backup simulation of a virtualized SQL Server database.

File server backup scenario

The initial complete backup of our file server took just over 6 hours. Subsequent full file server backups using source deduplication took an average of just over 3 hours, achieving a deduplication ratio of at least 24.4:1. For comparison, we ran a single backup using a backup-to-disk storage device on the Dell PowerVault DL Appliance without source deduplication, which took just over 6 hours.

Figure 3 shows the comparison of protected data versus actual deduplication data stored for our virtualized file server scenario.

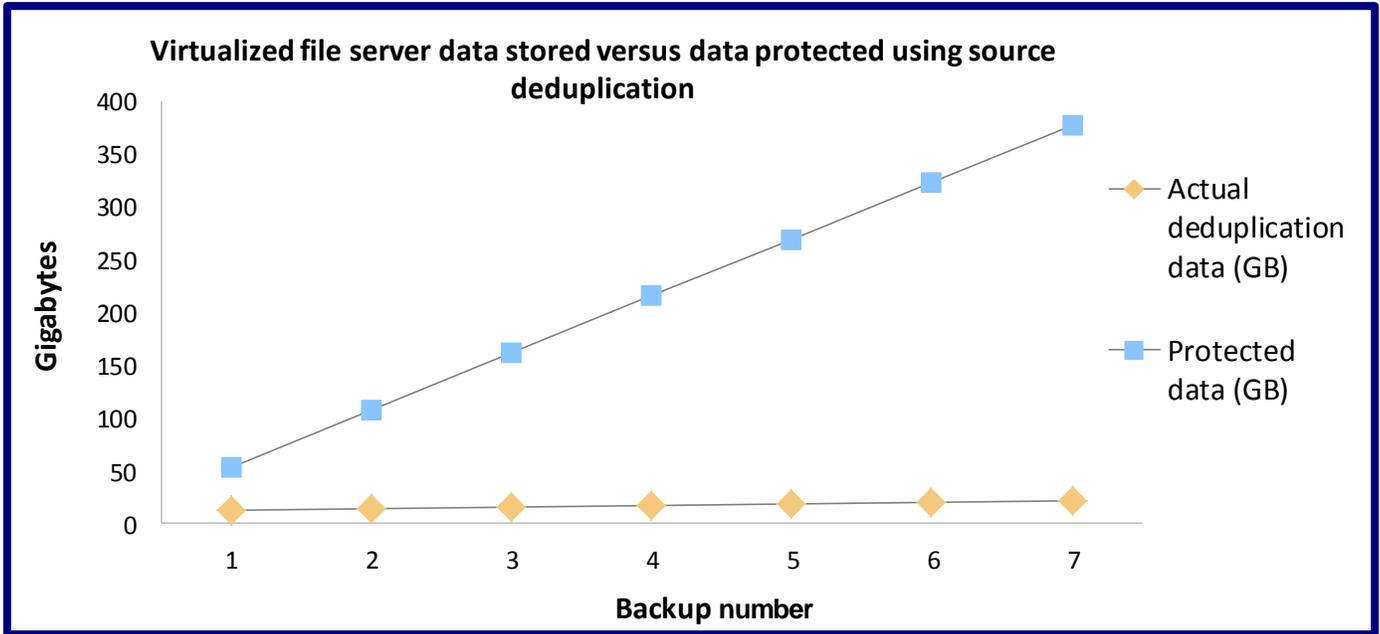


Figure 3: Comparison of protected file server data versus the actual data stored from our 7-day virtualized file server backup simulation.

Mail server backup scenario

The initial complete backup took just 7 hours. Subsequent full mail-storage-group backups using source deduplication took an average of 3 hours, achieving a deduplication ratio of at least 177.4:1. For comparison, we ran a single backup using a backup-to-disk storage device on the Dell PowerVault DL Appliance without source deduplication, which took roughly 6 hours.

Figure 4 shows the comparison of protected data versus actual deduplication data stored for our virtualized mail server scenario.

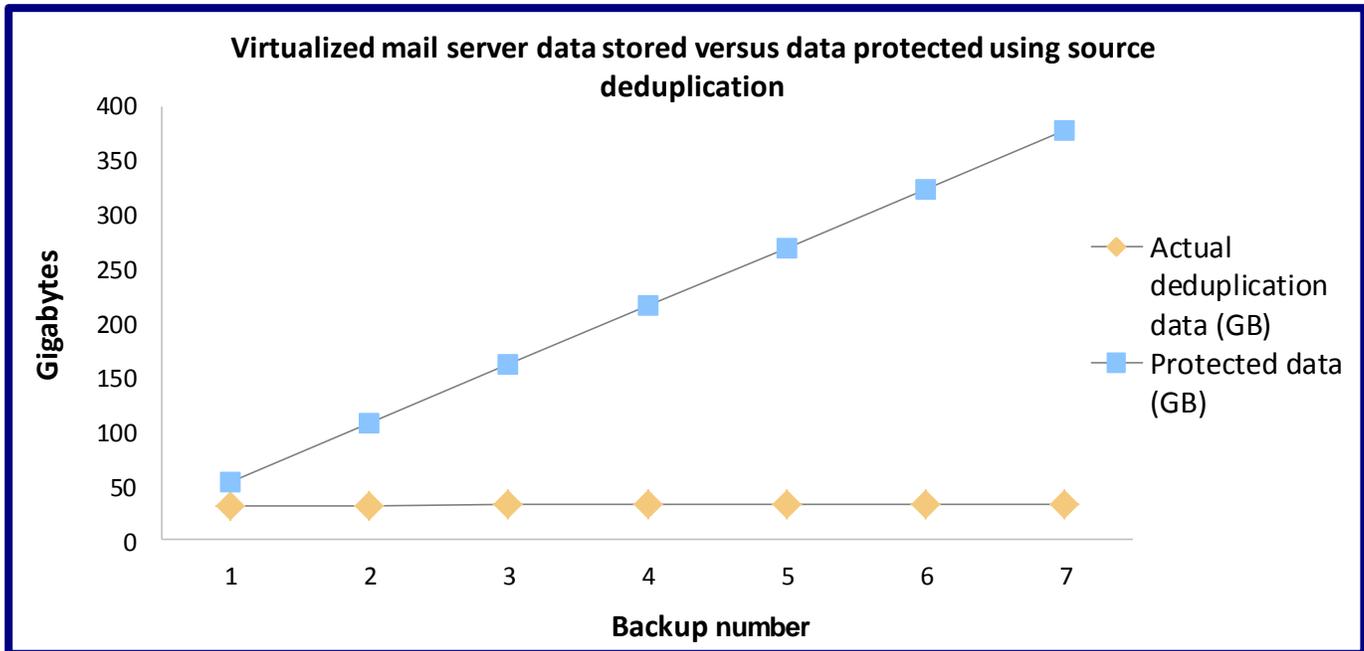


Figure 4: Comparison of protected mail server data versus the actual data stored from our 7-day virtualized Exchange 2007 backup simulation.

SUMMARY

The Dell PowerVault DL Appliance powered by Symantec Backup Exec 2010 R3 saved considerable amounts of storage space, bandwidth, and time in our tests. Compared to backup without source deduplication in a virtualized scenario, it reduced the amount of data transmitted over the WAN by an average factor of 230.5 to 1 and saved an average of 3 hours.



Principled Technologies, Inc.

1007 Slater Road, Suite 300

Durham, NC, 27703

www.principledtechnologies.com

Principled Technologies is a registered trademark of Principled Technologies, Inc. All other product names are the trademarks of their respective owners.

Disclaimer of Warranties; Limitation of Liability:

PRINCIPLED TECHNOLOGIES, INC. HAS MADE REASONABLE EFFORTS TO ENSURE THE ACCURACY AND VALIDITY OF ITS TESTING, HOWEVER, PRINCIPLED TECHNOLOGIES, INC. SPECIFICALLY DISCLAIMS ANY WARRANTY, EXPRESSED OR IMPLIED, RELATING TO THE TEST RESULTS AND ANALYSIS, THEIR ACCURACY, COMPLETENESS OR QUALITY, INCLUDING ANY IMPLIED WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE. ALL PERSONS OR ENTITIES RELYING ON THE RESULTS OF ANY TESTING DO SO AT THEIR OWN RISK, AND AGREE THAT PRINCIPLED TECHNOLOGIES, INC., ITS EMPLOYEES AND ITS SUBCONTRACTORS SHALL HAVE NO LIABILITY WHATSOEVER FROM ANY CLAIM OF LOSS OR DAMAGE ON ACCOUNT OF ANY ALLEGED ERROR OR DEFECT IN ANY TESTING PROCEDURE OR RESULT.

IN NO EVENT SHALL PRINCIPLED TECHNOLOGIES, INC. BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH ITS TESTING, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL PRINCIPLED TECHNOLOGIES, INC.'S LIABILITY, INCLUDING FOR DIRECT DAMAGES, EXCEED THE AMOUNTS PAID IN CONNECTION WITH PRINCIPLED TECHNOLOGIES, INC.'S TESTING. CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES ARE AS SET FORTH HEREIN.
