HP OpenView Storage Data Protector Advanced Backup to Disk

Data sheet

You're familiar with backing up data to tape—you've been performing these tasks for years. You've heard about backing up to disk, but have not pursued that as a business process because you were not sure of its benefits. The issue with today's technology is that as the volume of data increases, the amount of time required to perform a backup and a restore is reaching unacceptable lengths. This is increasingly untenable as multinational organizations are expected by their partners and customers to operate around the clock, every day of the year. In short, downtime, no matter how brief, can no longer be tolerated. If you are also facing these challenges, then the Advanced Backup to Disk feature of HP OpenView Storage Data Protector is the right choice for you: store ever more data at an ever lower cost and with less disruption to business continuity.

Tape-based backup

The traditional approach to data protection has always been tape-based backup—where the production data on your servers is copied to a tape drive or library during a scheduled backup window.

The key to this approach is ensuring that backups are performed regularly enough to meet your tolerance for loss of information—i.e., if you can cope with five days of data loss, then one weekly backup would be sufficient; but if you need to protect data created just a few hours ago, then multiple daily backups would be needed.

Disk-based backup

In the last few years, disk-based backup has become a viable addition to traditional tape strategies. There are several disk storage technologies on the market and their common advantage is that they reduce recovery time, improve backup performance and support simultaneous backup and restore operations. However, as with tape-based backup, disk-based backup comes with its risks and problems such as online data being susceptible to corruption and viruses, and higher costs for storing backup data online to disk.

HP understands that the IT issues you face today are driven by the needs of your business. By combining tape-based and disk-based backup in a multi-layer approach, you can counteract their respective limitations and start moving towards a backup and restore solution that is aligned with the needs of your business.

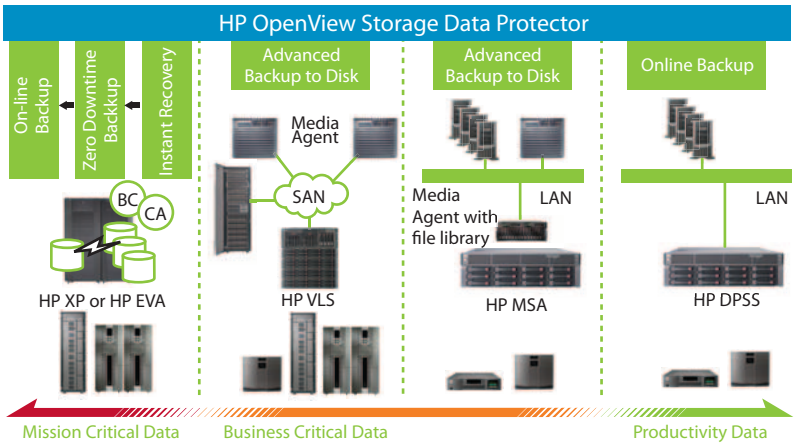
HP Data Protector: Backup to disk technologies

HP Data Protector delivers the solution for high-availability protection by integrating a variety of backup to disk techniques to eliminate backup windows. These range from online Backup to Zero Downtime Backup that ensure that data is both protected and available. Zero Downtime Backup is replication based backup to disk, and extends the capabilities of Online Backup by moving the backup load away from the application server to a dedicated backup server. Instant Recovery takes Zero Downtime Backup a step further, meeting the demands of the most complex enterprises for specific recovery time and recovery point objectives, and enables critical data to be recovered within minutes. These concepts are not topic of this product brief, for further details, please see the "HP OpenView Storage Data Protector Zero Downtime Backup and Instant Recovery Product Brief."

Advanced Backup to Disk Concept

With Advanced Backup to Disk, HP Data Protector allows backup to any disk, using either file library, or Virtual Tape Library (ideal and easy to configure solution for SAN environment). Advanced Backup to Disk meets the demand for fast and direct restore from disk with

Figure 1:
Backup to disk technologies



the ideal solution for customers who want to stage the backup on fast central disk space before optionally moving it to tape.

The Advanced Backup to Disk extension of HP Data Protector will help you realize the following benefits:

- **Reduced recovery time**—When you backup to disk, you can restore data instantly, unlike a tape drive that has to be mounted, loaded and searched.
- **Improved backup performance**—Backing up to disk allows data to be copied at the optimum level of performance—whether you're performing a full backup or smaller incremental backups.
- **Branch office backup consolidation**—Backup to disk allows you to replicate the data at distributed branch offices to a central site for consolidated backup.
- More **reliable** backup to disk overcomes tape problems and reduces business risks.

File library

Data Protector Advanced Backup to Disk offers a disk-staging solution, using disk as a cache prior to a backup to tape. The concept of disk staging is based on backing up data in several stages to improve the performance of backups and restores, reduce costs of storing the backed up data, and increase the data availability and accessibility for restore. The backup stages consist of backing up data to media of one type and later moving it to media of a different type. The data is backed up to media with high performance and accessibility, but limited capacity (for example, system disks). These backups are usually kept accessible for restore for a period of time when a restore is the most probable. After a certain period of time, the data is moved to media with lower performance and accessibility, but high capacity for storage, using the object copy functionality (see Figure 2).

HP Services

HP Services has end-to-end, industry-leading expertise in delivering solutions that help you improve your business agility. From initial assessment and design to technical integration and ongoing support, HP Services can be your single point of contact and accountability.

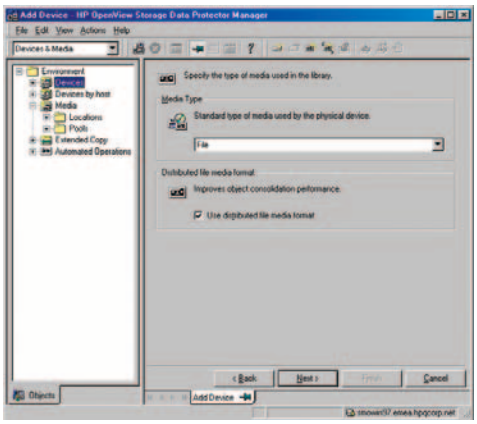
HP offers a full range of pre-packaged or customized services and solutions. These cover the entire project lifecycle and are delivered by qualified and certified HP professionals or designated channel partners.

HP related services:

- **HP Backup and Recovery Solution Service**—provides end-to-end management of your backup integration process. We analyze your business and IT environment; develop a comprehensive integration plan and timetable; design an architecture that suits your critical requirements; install the Data Protector software; implement your solution; and validate and monitor your configuration.
- **Other HP Storage Management Services** include:
  - Storage Essentials Solution Service
  - Data Replication Solution Service
  - Disaster Tolerant Management Service
  - Electronic Vaulting Service for Enterprises
- **HP Care Pack Services**—a comprehensive portfolio of services for maintaining the highest levels of IT availability.
  - Critical Service
  - Proactive 24 service
  - Support Plus 24 service
- **Instant Support Enterprise Edition (ISEE)**—remote monitoring and support solution for your servers, storage, and networks.
- **Business Continuity Services**—protect and minimize disruption to IT infrastructure and associated business processes against site outages, disasters and environmental events.

Across the globe, enterprise customers rely on HP Services to design, deploy, operate, and support the IT systems that run their businesses. HP Services capabilities cover consulting and integration, outsourcing, and support services. With more than 67,000 services professionals operating in 170 countries, acknowledged technology leadership, and a heritage of innovation in services, HP Services can point to an extensive track record of helping customers improve their ability to support their changing business needs. For further details, contact your HP sales representative, your authorized HP business partner, or visit: **www.hp.com/hps/storage**

Figure 2:
Virtual Full Backup



The file library device is the basis for staging the backup on disk (with the option to copy it or move it to tape later). The file library consists of configured directories which include files where the data is stored to. The backup data is written into the files on disk in HP Data Protector tape format. The key focus for file device libraries are more affordable disk arrays, especially the current SATA-based HP disk arrays which are positioned mainly as backup devices. In case the file library is running out of free space, new backup capacity can be assigned automatically. The file library is configured by defining mount points where HP Data Protector will create its 'media' and optionally, the number of simultaneous 'writers' that will be used. Then, HP Data Protector can utilize this just like any other physical backup device and will auto-create the media files on the fly as required.

"Object Copy" provides the capability to copy from one type of media to another. This means that you can perform a backup to the file library, and then (immediately after the backup or at a scheduled time) automatically copy the file-based media to a physical media such as LTO. So this becomes a method to perform disk staging of slower backups (e.g., over a slow LAN), followed by high-speed backup to a physical device.

Virtual Tape Library (VTL)

Virtual tape consists of dedicated hardware that emulates tape and tape libraries, but uses disk for data storage. It is connected to a SAN and appears to the hosts on the SAN as a defined set of tape drives and media. However, when running a backup to a virtual tape, the backup data is actually stored on disk, and can then be copied out to physical tape at a later stage. Virtual tape is a good fit in an environment where the backup software does not have backup-to-disk capabilities. E.g. the HP VLS 6000 virtual library system, which is tuned for backup performance and for sequential read/write access.

How HP Data Protector 6.0 delivers better backup

HP is taking a significant leap forward with the latest release of Data Protector 6.0, now with a host of innovative new capabilities, significantly reducing time and resources required to perform backups and comprising of the following key enhancements:

Synthetic Full Backup

Data volumes are increasing, but at the same time IT managers have ever-shorter back-up windows to work with. Increasingly, there is an organizational expectation that data should be instantly accessible. Current technologies require many full backups, because it's very time consuming to restore a long chain of incremental backups. Full backups require a lot of space on the backup side and they are very disruptive for the operation. Often full backups continue for many hours and put significant performance degradation on the IT resources. It is these issues that are addressed by synthetic backup.

Simply put, synthetic backup puts a stop to the build up of incremental backups, thus eliminating the need to run lengthy full backups. The new technology works by merging all incremental backups into a full 'synthetic' backup; a process that can be repeated indefinitely, with no need to run a full backup again. Because the restore chain consists of only one element, the time required to recall data, and load on the network, is dramatically reduced.

Synthetic Full Backup Benefits—a summary:

- Eliminates the need for full backups. After the initial full backup, only incremental backups are performed, which significantly reduces the time needed for the backup.
- Consolidation of backed up objects is performed on the Media Agent, putting no stress on either the production servers or the network.
- A full restore from a Synthetic Full Backup is as fast as from a conventional full backup, as there is no need to retrieve data from incremental backups. This eliminates the reading of each incremental backup in the restore chain, and if tape devices are used, also loading and unloading of several media and seeking for object versions.

Virtual Full Backup

If all the backups, full and incremental, are written to the same file library which uses a distributed file media format, an even more efficient type of synthetic backup is possible. This is called Virtual Full Backup. The solution uses pointers to consolidate data rather than copying the data. As a result, the consolidation takes less time and avoids unnecessary duplication of data.

If synthetic backups are performed frequently, and the sources are maintained, this typically uses up significant storage space on the backup media. However, if a Virtual Full Backup is performed, the consumption of backup media space is minimized.

With Virtual Full Backup, the space consumption largely depends on the size of the backed up files. If the files are significantly larger than the block size used, Virtual Full Backup achieves maximum savings of the space compared to normal synthetic backup. On the other hand, if the files are smaller than the block size, the savings are rather small.

Ordering information

For detailed ordering and licensing information, including configuration examples, please see:

- "Data Protector Installation and Licensing Guide" on the Data Protector DVD or at **www.hp.com/go/dataprotector**
- "Data Protector ordering and configuration video" available at **hpbroadband.com/program.aspx?key=JECF2U4UH4**
- "Data Protector Order Tool" on the Data Protector DVD
- For ordering information, please see QuickSpecs: **www.hp.com/go/quickspecs**

Warranty and included services

All Data Protector Licenses include one year of HP Software Support 8x5 (software technical support during business hours and software product and documentation updates) which is a key benefit to purchasing Data Protector

HP warrants only that the software media will be free of physical defects for a period of ninety (90) days from delivery. For more information about HP's Global Limited Warranty and Technical Support, visit: **www.hp.com/products/storageworks/warranty**

HP Care Pack services

HP Care Pack Services offer upgraded service levels to extend and expand your standard product warranty with easy-to-buy, easy-to-use support packages that help you make the most of your hardware and software investments. They let you choose the support levels that meet your business requirements, from basic to mission-critical. They help you contain total cost of ownership.

HP Care Pack warranty extensions can be purchased along with HP products to cost-effectively upgrade or extend your warranty. For many products, post-warranty HP Care Pack Services are available when your original warranty has expired. For more information on these services, contact your local HP sales representative, authorized HP business partner, or visit: **www.hp.com/go/storage/carepacks**

Additional HP support services

HP Services provides a broad spectrum of services to commercial and enterprise customers, including performance and availability services such as proactive mission-critical services, as well as support management services for deployment of the entire IT infrastructure, including HP and multivendor environments. For more information on these services, contact your HP sales representative, authorized HP business partner, or visit: **www.hp.com/hps/storage**

Education services

HP offers a variety of training methods to fit your needs including traditional instructor-led courses at one of our 120 training centers worldwide, onsite training customized to your needs, in your facility, or even Remotely Assisted Instruction Learning that combines the best of traditional classroom training (including its live instructor and labs) with the best of online training (no traveling required). And if you like learning on your own schedule, at your own pace, make use of e-learning opportunities on the award-winning HP IT Resource Center, a "learning community" with extensive on-demand resources that can be accessed 24x7. For more information on these services, contact your HP sales representative, authorized HP business partner, or visit: **education.hp.com/curr-storsan.htm**.

Financial services

HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage, and ultimately retire their HP solutions. For more information on these services, please contact your HP sales representative or visit: **www.hp.com/go/hpfinancialservices**

For more information

For more information on HP OpenView Storage Data Protector, please contact your HP representative or visit **www.hp.com/go/dataprotector**.

To learn more, visit www.hp.com

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