

HP Data Protector software Zero Downtime Backup and Instant Recovery

Data sheet



Business uninterrupted with HP Data Protector Zero Downtime Backup and Instant Recovery software

With today's increasing emphasis on mission-critical systems, from messaging to resource planning to online Web presence, application downtime for any reason has become increasingly unacceptable. To measure the quality of data recovery strategies, two metrics have emerged: the Recovery Time Objective (RTO), or the maximum available time the business can afford for a recovery operation; and the Recovery Point Objective (RPO), or the measure of the maximum amount of data your business can afford to lose. When measured against these metrics, traditional tape backup – particularly for large datasets in mission-critical environments – no longer meets the business needs.

Since backup windows are luxuries that simply do not exist in 24x7 operations, backing up open files and databases is a constant challenge. For data centres with zero tolerance for performance impact and the need to eliminate backup windows, there is Zero Downtime Backup (ZDB), a replication-based backup to disk technology which leverages array-based solutions to provide zero impact backup by performing it on the copy of the production data. Instant Recovery (IR) takes this a step further by retrieving data directly from the replicated images on disk, allowing customers to recover critical data in minutes. ZDB and IR are two of the most important backup technologies available for applications using

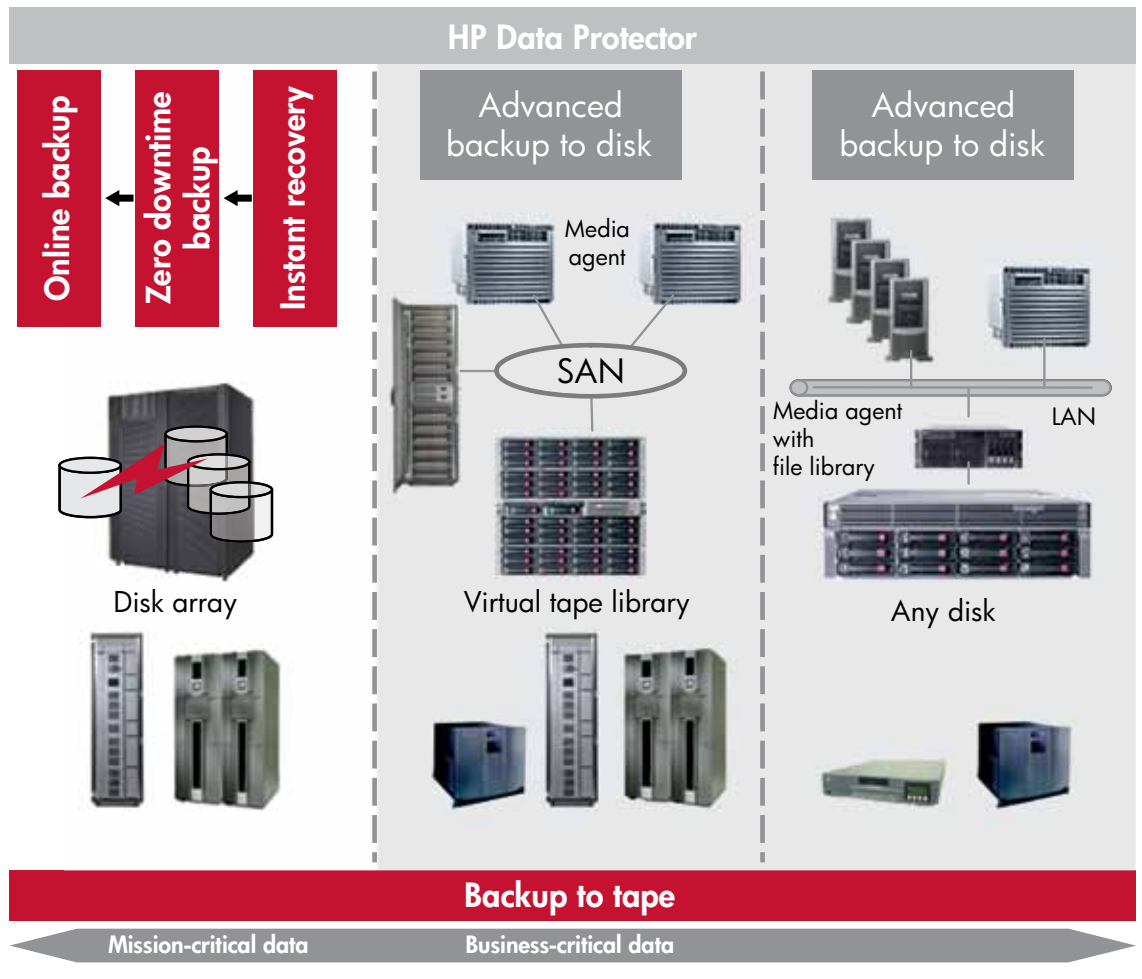
disk arrays in physical or virtual high-availability environments. By shifting the focus from backup to recovery, HP can help IT organisations look at protection in a new light and take advantage of a new set of tools to improve the quality of their recovery strategies.

HP Data Protector Zero Downtime Backup software provides continuity of business operations in 24x7 mission-critical environments by performing backup on the copy of the production data; with the option to copy it or move it to tape. HP Data Protector fully automates this process and makes it easy to manage replicated data through a simple GUI. Unlike other solutions in the market, HP Data Protector is fully integrated with the disk array, therefore, no additional scripts are required to perform the operations.

HP Data Protector Instant Recovery software removes the occurrence of unplanned downtime by offering continuous information availability during disasters and other potential data loss situations. HP Data Protector allows IR by retrieving data directly from the replicated images on disk. It also allows you to keep multiple data replicas (called mirrors or snapshots) available at the same time. Critical data is recovered within minutes, not hours.



Figure 1: Backup to disk technologies



Features and benefits

Zero downtime backup

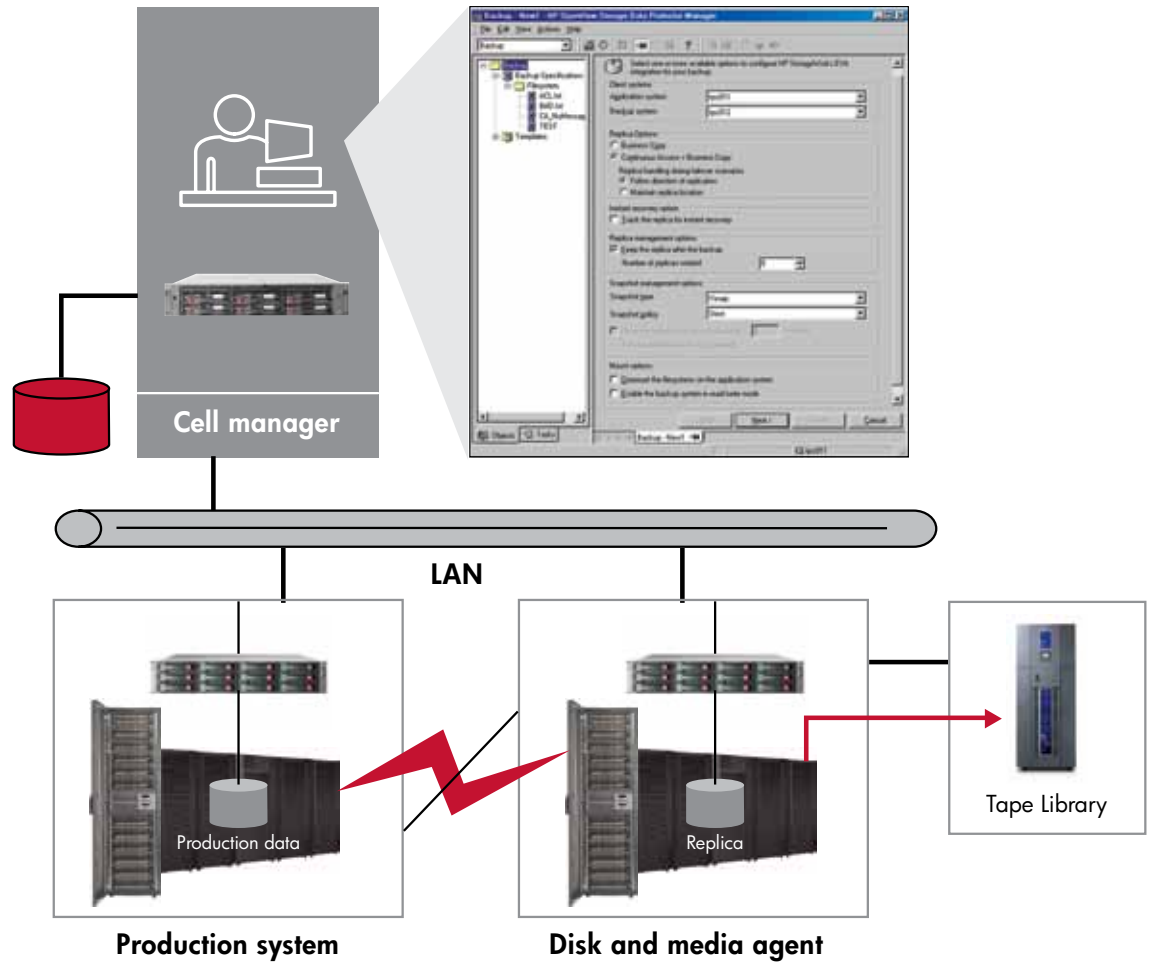
- No performance degradation due to backup – delivers the highest level of application performance during backup
- Fully automated protection process, including creation and rotation of mirrors or snapshots
- All application data into a consistent state before the backup is performed
- Administrators to choose disk protection, tape protection or scheduled combinations to meet their protection requirements
- Easy implementation of backup jobs without custom script development
- Reliable disk operations permit non-disruptive, application-aware protection as frequently as once an hour, or as necessary
- All options that can be easily configured using simple selections

- The HP Data Protector GUI to permit complete control of the mirror specification
- Administrators can choose the schedule of the backup to tape
- Maintains data integrity of your virtual server environment by protecting both the virtual machine and its application data with zero performance impact

Instant recovery

- IR capabilities based on mirroring and snapshot technologies which use disk as a recovery media rather than tape
- Operational efficiencies and cost savings, including consolidation of servers and applications
- IR of terabytes of data in minutes, not hours, by switching the application to a backup on disk instead of copying the backup data back to the original location

Figure 2: ZDB with local and remote replication

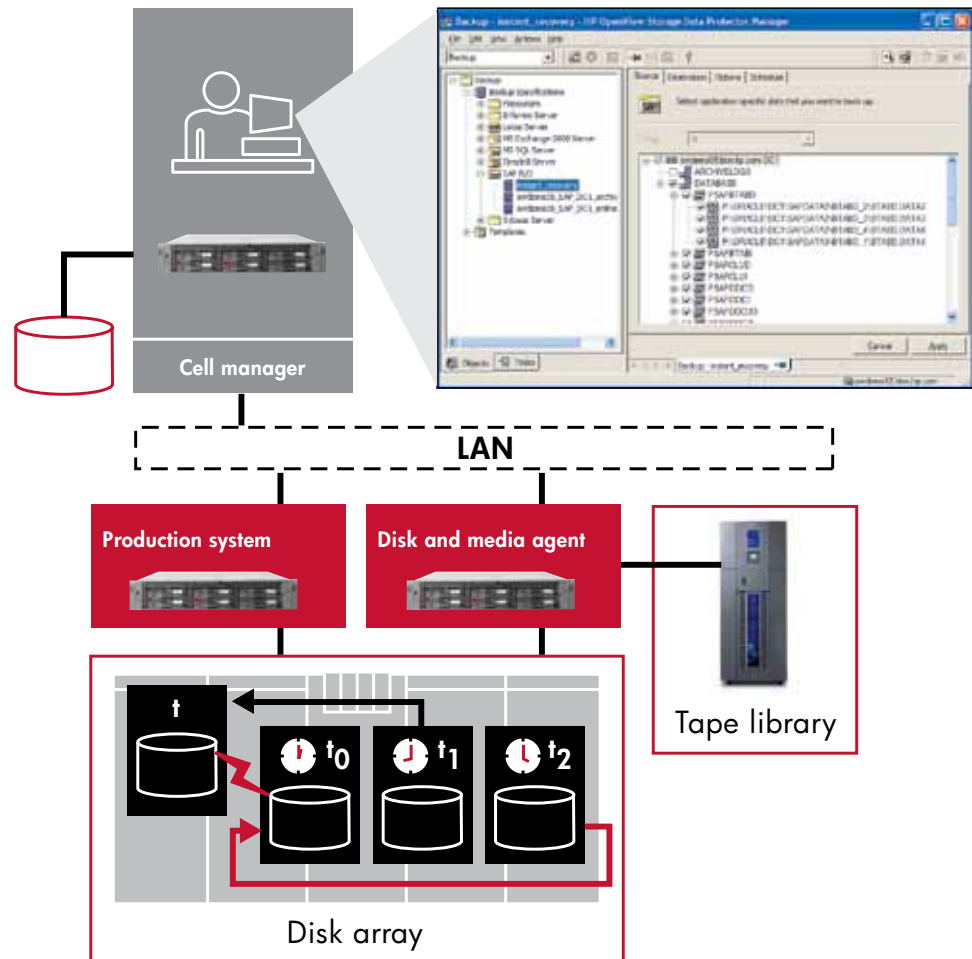


- Recovery to the last minute/second through full automation of the recovery process, including roll forward of transaction logs, provides a consistent application recovery
- HP Data Protector was first to market with IR in November 2001 (v4.1) and has continued to extend this capability to broader platforms, applications, and storage arrays
- Mirrors, snapshots and snapclones are rotated based on a pre-defined schedule
- For recovery, the administrator to select a specific recovery image from the GUI
- Data Protector fully automates the protection process, including creation and rotation of mirrors or snapshots
- Disk operations permit non-disruptive, application aware protection as frequently as once an hour
- Administrators can choose recovery from disk, tape or combinations to meet their recovery needs
- Fast restore and point-in-time recovery of critical data in a virtual server environment

ZDB describes a backup approach in which replication techniques (for example, split-mirror, snapshot or snapclone) are used to reduce the impact of backup operations on an application database or file system. ZDB creates, on the array, a copy of the data to be backed up and then performs backup operations on the copy, rather than on the original data. ZDB enables customers to instantly copy data to disk and then, at their convenience, back up that disk copy to tape. This 'staged backup' process enables business applications to stay online 24x7, maintain business-critical application performance and protect critical data. Incremental ZDB provides file-level incremental ZDB from replica to tape. Only changed files are copied to tape reducing the backup volume.

ZDB also supports remote replication to help overcome local data loss by performing backup on the copy of the production data at the remote site. A separate backup system is connected to the disk array with the backup volumes, while the source volumes are connected to the application system. Streaming of data to tape is performed from the replicated volume after the pair has been split, allowing the application system to remain online and available for use.

Figure 3: Instant recovery



Instant recovery is a process of restoring the backup copy of data, held on the array, to its original location on the array to facilitate high-speed recovery; thereby, avoiding the need to perform a restore from tape. Depending on the application/database concerned, this may be all that is required, or other steps – such as the application of transaction log files – may be required for full recovery. See figure 3 for details.

NOTE: To be available for restore using instant recovery, replicas must have been produced using ZDB to disk or ZDB to disk + tape. Otherwise, information about the replicas, required for the restore, is not tracked by the Data Protector.

Three methods in Data Protector ZDB family

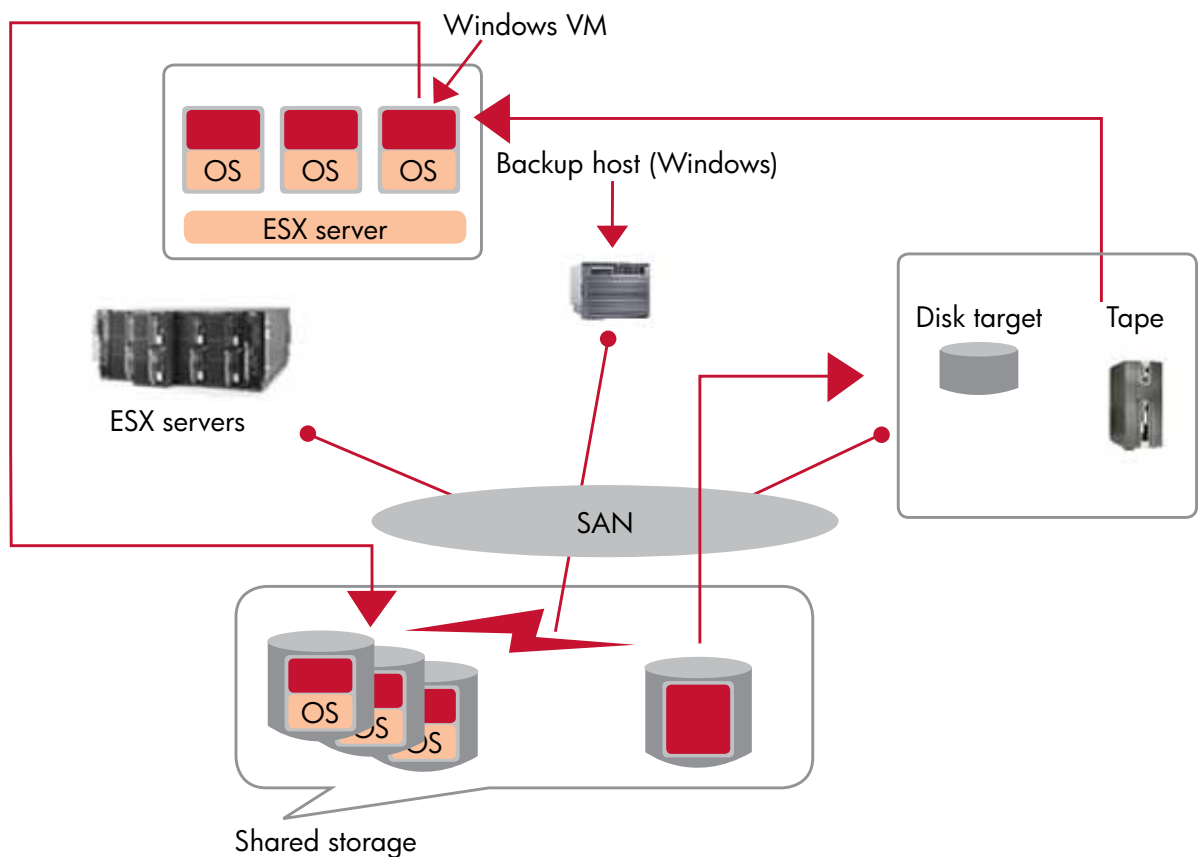
There are three methods that make up HP Data Protector ZDB family:

- **ZDB to tape:** Data can be streamed from the replica to a tape backup device. Data is normally restored using standard restore from tape, so no

information about the replica is stored and it can be discarded after the backup process is complete.

- **ZDB to disk:** The replica can be kept on the array and used as the backup. Data backed up using this method can be restored directly from the replica using instant recovery functionality. If replicas are created for this purpose, important array related information about the replica must be recorded, to allow the data to be restored. With ZDB to disk, one or more replicas of the data backed up can be kept in an array. In fact, a time-based series can be set up, with each replica corresponding to a particular point in time.
- **ZDB to disk + tape:** Data can be streamed from the replica to a tape backup device and, afterwards, the replica can be kept on the array and used as a backup. This provides extra flexibility – data can be restored both by using standard Data Protector restore from tape (allowing restore of individual backup objects) and directly from the replica using instant recovery functionality (allowing recovery of the complete replica).

Figure 4: ZDB and IR of VMware



Under normal circumstances, backups are performed regularly and restores are performed infrequently. In many cases, it may be acceptable to perform ZDB to tape and accept the time required to perform a restore from tape, if necessary. However, particularly with high-availability systems, the ability to perform an instant restore as well as high-speed backups may be essential. In such cases, it is better to perform ZDB to disk or ZDB to disk + tape, so that high speed restore is possible, using instant recovery functionality. When restoring data with instant recovery, the application and backup systems are disabled and the contents of a replica are restored directly to their original locations. Because the restore is performed internally within the array, it is very high speed. Once the restore has been completed, the sections of the database/file system concerned have been returned to their states at the time the replica was created and the application system can be re-enabled.

Overcome Virtual Server Backup Challenges

HP Data Protector ZDB/IR offers a powerful solution for VMware and Microsoft® virtual environments. For Microsoft Hyper-V environments, the HP Data Protector ZDB agent creates transportable VSS snapshots which are made available for IR. All operations are performed with zero impact to the Hyper-V host server and virtual machines. For VMware environments, the ZDB/IR agent first takes a snapshot of data on the virtual machine (VM) and migrates the snapshot to a proxy host. Backup operations are then performed on the snapshot. These solutions allow administrators to avoid many of the challenges associated with virtual server backup:

- Impact-free backup at all layers
- No load on the servers or VMs
- Instantaneous recovery of all application data

For a complete breakdown of the data protection capabilities of HP Data Protector in virtual server environments, please see the HP Data Protector Virtualization solution brief.

“If I had to summarise the system’s benefits in just one word, it would be ‘ease.’ Ease of management, because our distributed setups have now been tied together by HP Data Protector software. Ease of response, due to the bigger, more flexible backup windows we’ve been afforded by HP Virtual Library System. And ease of use, with the noticeable leaps of productivity thanks to features like Incremental Zero Downtime Backup.”

**Sudhir Rao, Asst. General Manager,
State Bank of India**

Warranty

HP warrants that the software media will be free of physical defects for a period of 90 days from delivery. For more information about HP Global Limited Warranty and Technical Support, visit

www.hp.com/products/storageworks/warranty

HP Software Support

HP Software provides a range of support products to meet your individual business needs:

- HP Software Support 9x5
 - 24x7 Web-based intelligent response
 - Software discovery and license history
 - Software patches, updates and upgrades
 - Phone-in 9x5
- HP Software Support 24x7
 - Same as above but with 24x7 phone-in assistance
- HP Software Engineering Days
 - Technical assistance delivered either remotely or onsite by highly qualified and experienced support personnel.

For more information on these support services, please see www.hp.com/go/hpsupport

HP Software Education Services

HP Software Education Services provides a comprehensive curriculum for all HP software products, including legacy Mercury, SPI, OpenView, Opsware and Tower products. The curriculum delivers invaluable tips and tricks that can help customers increase business outcomes using different methods of delivery at multiple locations across the world. We offer flexible learning options, including instructor-led training in our classrooms or onsite at your facility, Web-based training, end user training, as well as customised training courses and professional certification programmes.

We know HP software well, which enables us to deliver the outstanding training experience possible for you and your staff. Increase the value of your HP software by enabling your staff with the tools they need to fully deploy your investment today.

To learn more about our extensive HP Software training services, including course details, please visit us at www.hp.com/learn/hpsw

HP Financial services

HP Financial Services provides innovative financing and financial asset management programmes 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 on HP Data Protector software

Interactive digital hub site:

<http://www.hp.com/go/imhub/dataprotector>

General Web page:

<http://www.hp.com/go/dataprotector>

(Note: The latest HP Data Protector software support matrices can be found by clicking 'Support Matrices' from this page)

Direct link to quickspecs with detailed product specifications, ordering information and more:

<http://www.hp.com/go/quickspecs>

HP Services

The HP Backup and Recovery Solution Services provide customers with improved speed and confidence in IT infrastructure deployment, and prepare their IT staff and processes for operational success. These services are a suite of scalable, clearly defined service engagements that provide product and solution deployment consistent with HP specifications. HP Solution Services helps a successful implementation, improves the productivity of your technical staff and allows your IT resources to stay focussed on their core tasks and business priorities.

For more information visit www.hp.com/services/backup or contact your HP sales representative or authorised business partner.

As application downtime becomes increasingly unacceptable, HP Data Protector software Zero Downtime Backup and Instant Recovery helps provide continuity of business operations in 24x7 mission-critical environments. To learn more, visit: <http://h30501.www3.hp.com/t5/Data-Protection/ct-p/DP>



Share with colleagues



Get connected

www.hp.com/go/getconnected

Current HP driver, support, and security alerts delivered directly to your desktop

© Copyright 2008, 2010 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Microsoft is a U.S. registered trademark of Microsoft Corporation.

4AA2-3743EEW, Created December 2008; Updated June 2010, Rev. 1

