



I D C T E C H N O L O G Y S P O T L I G H T

PBBAs Tap into Key Data Protection Trends to Drive Strong Market Growth

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Purpose-built backup appliances (PBBAs) have grown rapidly since their introduction around 2006, and they are expected to generate \$3.38 billion in revenue in 2014. PBBAs are turnkey data protection solutions, providing hardware/software bundles targeted at helping organizations protect and recover their data in the highly dynamic 3rd Platform computing era. They are excellent options for enterprises looking to deploy their first backup solution or expand their existing data protection infrastructure. PBBAs provide ready access to the latest disk-based data protection technologies to help organizations deal with the high-growth, highly agile, and extremely heterogeneous computing infrastructure that is quickly becoming a reality in today's datacenters. This Technology Spotlight examines the PBBA market, discussing the drivers of market development and the key benefits these appliances offer enterprises. It also looks at the role of Symantec in this strategically important market.

Introduction

The proliferation of 3rd Platform computing, characterized by mobile, social media, big data/analytics, and cloud workloads, is driving significant change in data protection requirements. To meet increasingly stringent recovery point objective (RPO) and recovery time objective (RTO) requirements, improve storage efficiency, and simplify data movement for disaster recovery purposes, disk (not tape)-based data protection has become the new standard.

While PBBAs tend to support tape export as an option, they are designed from the ground up to use disk as the primary backup media. As such, they offer a wide range of disk-based data protection technologies such as incremental and differential backups and recoveries, snapshot integration for off-host backup, deduplication, and replication. These same features can be added to existing enterprise backup software, but PBBAs can offer pre-integrated packages that already include them and have advantages over the type of "do it yourself" integration that had been popular in the past:

- **Simplified acquisition.** PBBAs provide all the hardware and software needed for a comprehensive data protection solution under a single model number, while pre-integrated packages feature bundled software that represents sometimes substantial discounts from a la carte purchases.
- **Complete access to very rich functionality.** PBBAs generally are configured to offer all the latest disk-based data protection features offered by the vendor without any of the complexity of traditional access and deployment models.
- **Centralized management.** Relative to administrator-assembled backup solutions, PBBAs provide a single point of centralized management across the data protection hardware and software and for maintenance and support operations that is much easier to use.
- **Easy deployment.** As an integrated bundle available from a single vendor, PBBAs are configured, tested, and fully supported by that vendor. This relieves customers of having to perform their own testing and integration and provides a more efficient single point of support contact.

Definitions

The "appliance" concept is well known in the industry. A server, pre-configured out of the box with software and hardware intended to provide a turnkey solution, leads to faster, easier deployments to address a specific problem. The traditional complexity of purchasing and assembling a backup solution made the introduction of PBBAs very attractive to data protection administrators. Since PBBAs were introduced, the market has grown rapidly. IDC expects PBBA revenue to be \$3.38 billion in 2014 and to grow at a 7.4% CAGR through 2018 when it will reach \$4.49 billion.

The PBBA market is a subset of the data protection and recovery market and includes two distinct types of appliances: PBBA backup targets and PBBA integrated systems. PBBA backup targets provide disk-based data protection functionality that improves backup, recovery, and storage efficiency; are designed to integrate into heterogeneous environments; and are used in conjunction with third-party backup software. PBBA integrated systems are tightly integrated with backup software and designed to deliver on the full promise of a turnkey data protection solution that is fast and easy to deploy.

PBBA integrated systems make it easy to deploy all the latest disk-based data backup functionality to address data protection concerns. Features such as incremental and differential backup and recovery, deduplication, snapshot integration, and replication improve the efficiency and performance of backup environments. PBBAs often include disk caches that are used as landing pads for backups, helping shorten backup windows and speed recovery times.

PBBAs can support a range of interfaces, including SAN, NAS, virtual tape library (VTL), and cloud options. Organizations that are leveraging cloud economics to help lower overall data protection costs are often using PBBAs as cloud gateways, with backups done to an on-premise appliance, which then later replicates backup sets to the cloud for longer-term storage. Recent IDC research indicates that a very high percentage (87%) of organizations that leverage the cloud in backup operations also retain an on-premise copy of at least the most recent backup.

Service-level agreements for recovery are often measured in terms of RPOs and RTOs. RPO defines the amount of data loss acceptable in the event of a failure, while RTO defines the time it takes to bring a failed application service back into normal operation.

Integrated PBBA Benefits

Relative to purchasing, integrating, and testing backup hardware and software on their own, data protection administrators are finding that PBBAs offer a number of benefits:

- **Simplified purchasing.** PBBA packages simplify the purchase process, including under a single model all the latest disk-based data protection functionality that is needed to protect and recover both 2nd (client/server) and 3rd Platform computing environments.
- **Faster, easier deployment.** Given that PBBAs can be integrated into existing datacenter environments, they are very fast and easy to deploy, both for customers purchasing their first backup solution and for customers that want to expand their existing data protection infrastructure either in the datacenter or in remote locations.
- **Consolidation efficiencies.** The all-in-one functionality of PBBAs lets customers retire multiple older pieces of equipment, such as tape libraries, VTLs, and legacy target deduplication appliances, replacing them with a single, centrally managed solution. And by consolidating all of this data into a single repository, they can often achieve higher data reduction ratios that help make more efficient use of available storage capacity.

- **Proven, tested configuration.** The solutions packaging approach of PBBAs relieves administrators of most of the integration and testing work that was historically required when backup infrastructure was either added or expanded — a particularly important advantage when IT generalists with minimal storage expertise are increasingly being tasked with storage management responsibilities by cost-conscious organizations looking to consolidate responsibilities into fewer groups.
- **Better maintenance and support model.** PBBAs can be patched and/or updated as a single, integrated platform, simplifying maintenance operations. With regard to troubleshooting and support, PBBAs provide a single point of contact, which allows administrators to resolve problems more quickly and easily than if they used solutions they assembled themselves with products from different vendors.

Key Trends

Several key trends in the IT industry have led to the rapid market growth for PBBAs:

- **Explosive data growth.** The explosive data growth of the past several years is expected to continue with a 44% CAGR through at least 2018. Managing data growth consistently ranks as a top IT concern and drives frequent backup infrastructure expansion. As backup consolidation efforts bring more data under centralized control, the need for scalable platforms increases even more.
- **Burgeoning heterogeneity.** Many enterprises have a mix of 2nd Platform and 3rd Platform computing environments, presenting backup administrators with many different environments with different demands that need to be protected. This variety — virtual and physical servers, cloud computing, multiple hypervisors, different operating systems, various applications, managing disk and tape — presents significant challenges to enterprises that need to address data protection for each area in the most efficient manner.
- **Storage management moving to IT generalists.** IDC has noted that over the past five years, storage management tasks have increasingly migrated away from dedicated storage professionals to IT generalists who are much more familiar with server and application management. This trend is particularly prevalent in the midmarket, but it is affecting large enterprises as well. This makes ease of use a key concern as organizations look to move to more efficient, unified data protection strategies and puts a high value on automation that can help reliably increase the administrative span of control of less experienced storage administrators.
- **Increasingly stringent service-level agreements.** 3rd Platform computing environments raise the bar for high availability because they are servicing end users with an "always on" mentality for their application services. RPOs and RTOs have been slowly decreasing over time. Recent IDC research shows that 82.3% of small enterprises (1,000–4,999 employees) and 87.5% of large enterprises (10,000+ employees) have RPOs of under 1 hour for their most mission-critical applications. 73.4% of small enterprises and 77.6% of large enterprises have RTOs of under 4 hours for those applications. That same research indicates that the cost of downtime at the company level ranges from \$224,952 for small enterprises to \$1,659,482 for large enterprises.
- **Proliferation of disk-based recovery technologies.** As the data protection industry has evolved over the past decade, concerns around backup windows, minimizing backup impacts, providing faster recovery times, and more efficient utilization of data protection infrastructure have led to increased customer investment in disk-based data protection solutions. Disk-based solutions provide much better options than tape for rapid backup and recovery (incremental and differential approaches), maximizing capacity utilization (deduplication), and real-time data movement (replication) that directly improve business operations. IDC sees this trend only increasing going forward as enterprises minimize their use of tape.

Considering Symantec's NetBackup PBBAs

As the overall market-share leader in enterprise data protection and recovery software, Symantec brings trusted expertise to this market. The Symantec NetBackup 5200 and 5300 series appliances are integrated PBBAs that deliver the extensive data protection functionality of Symantec NetBackup, a widely deployed enterprise backup software platform.

- **NetBackup 5200 series** — a versatile integrated backup appliance that can be deployed as a master server or media server, or both, for a NetBackup domain, with or without deduplication
- **NetBackup 5300 series** — a backup media server with deduplication to support greater performance, capacity, and resiliency requirements in the enterprise

The NetBackup integrated appliances offer flexible data capture and recovery options, high-end scalability, comprehensive coverage, and an innovative feature set. They map well to the data protection requirements of midmarket and large enterprises.

The Symantec NetBackup appliances include:

- **Efficient data capture.** Agent and agentless backup; source-side deduplication; disk imaging technology; snapshots for off-host backups; and integration points with VMware, NetApp (NDMP), Oracle, and other third-party products (through Symantec's OpenStorage Technology) offer options for efficient data capture in today's heterogeneous environments.
- **Multiple recovery options.** Administrator-driven and user self-service file-, application object-, and system-level recovery options (including bare metal restore) can leverage differential technology to speed recovery. P2V options allow physical servers to be recovered into virtual environments.
- **Storage-efficiency features.** In addition to NetBackup Intelligent Client Deduplication, NetBackup appliances also support global deduplication of the back-end data stores; an incremental forever backup approach with synthesized fulls designed for faster, easier restores; and integrated WAN optimization to make the most of precious network bandwidth.
- **Protection and security.** Symantec Critical System Protection (CSP) provides advanced, policy-based intrusion detection and prevention, enabling the NetBackup appliance to be easily integrated into pre-existing CSP environments, while AES-256 encryption, supported at the client or the source, protects data both in flight and at rest, with all keys managed centrally on the appliance.
- **Broad coverage.** The appliances support virtual and physical servers; cloud environments; multiple hypervisors; Windows, Linux, and Unix (various flavors); disk and tape; snapshot backups and replication integration with major enterprise storage array providers; multi-protocol support (SAN/NAS/VTL over FC or Ethernet); and various online backup APIs for key enterprise applications such as VMware vSphere (VADP), Microsoft Hyper-V (VSS), IBM DB2, IBM Informix, IBM Lotus Domino, Microsoft Active Directory, Microsoft Exchange Server, Microsoft Office SharePoint Server, Microsoft SQL Server, Oracle, SAP HANA, SAP R/3, SAP Sybase, and others.
- **Virtualization-specific features.** NetBackup manages VM backups on a per-host basis so hypervisors do not get overloaded, while Symantec V-Ray technology enables file-level restores directly from disk image backups of VMs. VMware-specific integration points and features include Instant Recovery for VMware (boots a VM directly from the backup disk), Accelerator for VMware (leverages VMware's Changed Block Tracking for more efficient backups), Replication Director for VMware (uses NetApp FlexClones for off-host backup), and VM Intelligent Policy (automatically discovers new VMs to bring them under protection).

- **Enterprise scalability.** NetBackup is designed to deliver the performance, automation, flexibility, and manageability that allow initial deployments supporting tens of servers to efficiently scale over time to support thousands of servers.
- **Centralized management.** NetBackup provides a single point of management for all backup, archive, and disaster recovery data, which it supports with features such as Auto Image Replication to automatically replicate backup images and catalogs to other NetBackup domains, Storage LifeCycle Policies to automate the process of storage tiering as data ages, and NetBackup Replication Director to automatically replicate data and ensure that it continues to be visible in the backup catalog and managed according to NetBackup retention policies.
- **Extensive reporting and analytics.** NetBackup OpsCenter provides visibility into backup success, resource utilization, capacity consumption, and other key metrics by line of business, geography, or application to aid in backup infrastructure optimization and capacity planning going forward.

Challenges

Almost every enterprise already has some form of data protection in use. Incumbents tend to have the inside track when it comes time to expand or refresh the backup infrastructure, and Symantec is the incumbent in more accounts than any other enterprise backup vendor. A fair amount of switching does go on, however. IDC research has shown that most enterprises have between two and four different backup products in-house, with disparate deployments occurring as the customer adds new environments (legacy Unix, newer Windows, virtual environments, a specific backup solution for Oracle, etc.).

The desire to simplify data protection regimens is clearly one reason backup consolidation is top of mind in so many organizations, but to enable that, these unified platforms must meet the requirements that drove the disparate purchase in the first place. Integrated PBBAs with a full data protection feature set complemented by very comprehensive coverage can provide a strong incentive to stay with a particular vendor, and one of the key use cases Symantec highlights for the NetBackup 5230 is an extremely easy refresh path for existing NetBackup media servers.

While the scalability and broad functionality of NetBackup can be strong benefits in medium-sized to large enterprises, they can be potential inhibitors to purchase for much smaller companies. Extremely flexible and feature-rich data protection platforms tend to be more complex to install and manage than products that are designed to address just a single environment on a small scale. But smaller companies often grow to be bigger companies, and as they grow, they bring their incumbent data protection vendors forward with them. Backup Exec is suitable for smaller Windows-based environments, but as companies grow, they might need to replace their initial installation with a platform such as NetBackup. Few NetBackup customers are greenfield opportunities — most midmarket or larger enterprises are already using some kind of backup products. This challenge is not specific to Symantec; it is an issue for most vendors of very scalable enterprise data protection solutions.

PBBAs can be seen as either an offensive product type or a defensive product type, depending on the vendor. Their ease of deployment and better pricing and support models offer distinct advantages to deploying backup solutions consisting of different products from different vendors, and so they could be used as an offensive weapon against backup vendors that do not offer PBBAs. Incumbents looking to protect and expand their installed bases can use them to offer their customers an attractive growth path with a very easy deployment model, helping fend off competitive encroachment. The integrated PBA in particular is so critical in this respect that this is one of the few areas in which Symantec, traditionally a software vendor, offers a hardware solution.

Conclusion

While PBBAs offer leading-edge functionality in the disk-based data protection space, the most important value proposition these appliances bring to the table is ease of use. The flexibility to use them either to refresh existing backup servers or for greenfield opportunities has led to rapid market growth, and IDC expects that the PBBA market will continue to outgrow the overall data protection and recovery market over the next five years. The increasing penetration of 3rd Platform computing is demanding the type of functionality that PBBAs make it very easy to acquire and deploy — flexible and efficient backup and recovery options, storage efficiency features, comprehensive coverage, and enterprise scalability.

IDC believes the PBBA market will continue to be a driver of growth in the data protection and recovery space as enterprises look to consolidate, improve, and/or refresh their backup infrastructure. With the NetBackup 5230 and 5330 appliances, Symantec offers integrated PBBA solutions that deliver proven functionality, enterprise scalability, and a very flexible deployment model. Based on the past market performance of NetBackup, Symantec's appliance-based delivery model should help the vendor maintain its leading market-share status.

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Global Headquarters: 5 Speen Street Framingham, MA 01701 USA P.508.872.8200 F.508.935.4015 www.idc.com