

**Purpose-built backup appliances add reliability and speed to backup and restore operations. They remain as relevant in a cloud environment as they always have for on-premises operations.**

# Purpose-Built Backup Appliances: 2018 Market Results

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**Written by:** Phil Goodwin, Research Director, Infrastructure Systems, Platforms, and Technologies Group

## Introduction

Purpose-built backup appliances (PBBA) have been foundational components to many organizations' backup/recovery infrastructure for more than a decade. The importance of PBBA is illustrated in the numbers: According to IDC, in 2018, the data replication and protection (DR&P) market was approximately \$8.9 billion, while the PBBA market was \$3.6 billion.

Despite its size, the PBBA market is relatively specialized and has a limited number of participants. Currently, IDC tracks 10 "named" vendors and several smaller participants in the "other" category. The PBBA market was pioneered approximately 15 years ago; IDC has been tracking this market since 2010.

PBBAs have several distinguishing characteristics from other appliance devices and general-purpose storage arrays. These characteristics are:

- » Being able to specifically store backup data sets in the format of the backup software, making it impractical to use the data for other purposes
- » Implementing high rates of data deduplication (usually 10:1 or more) that make it impractical to use the data for tasks other than data restore
- » Enabling highly efficient data replication (largely due to data deduplication) to facilitate rapid backup from remote offices
- » Providing protocol translation (e.g., S3, OpenStack) for data transfer to cloud repositories ("cloud tiering")

PBBAs have become a cornerstone data protection technology for many organizations that are seeking to optimize and simplify backup and restore operations.

## AT A GLANCE

### KEY STAT

PBBA was a \$3.6 billion market in 2018, according to IDC.

### WHAT'S IMPORTANT

PBBA devices are evolving to address hybrid data protection requirements with faster data restoration and secondary use cases.

## Definitions

For the purposes of this market discussion, IDC identifies the following subsegments of the PBBA market:

- » **Target device:** Target PBBAs are disk arrays with specific functionality (i.e., deduplication, encryption) to house and manage backup data sets. Target devices do not include their own backup software and are intended to work with a wide variety of third-party backup applications.
- » **Integrated device:** Integrated devices are similar to target devices in configuration and capability with the addition of installed and bundled backup software.

It is important to distinguish PBBAs from cloud gateway devices. Although both devices may provide protocol translation and transfer of data from on-premises to the cloud, cloud gateway devices are intended to store data for only short periods of time (primarily as a data transfer buffer). PBBAs are designed to retain data throughout the life of the data backup and facilitate rapid data restore.

## Benefits

PBBAs solve several challenges associated with backup. The two primary issues solved are summarized as follows:

- » **Backstopping unreliable tape media and hardware:** Tape hardware, highly mechanical in nature, tends to be more error prone than disk arrays. Moreover, tape media can be lost, stolen, or broken or have unrecoverable errors. Thus, organizations turn to PBBAs as a primary backup target to reduce backup and restore failures caused by tape-related problems.
- » **Speeding up data restore:** As random-access devices, PBBAs can restore individual files very rapidly compared with the time needed to load, mount, search, and stream a tape. This is especially true if the tape has been moved offsite, where the recall process can be hours or days.

Of course, PBBAs and tape are not mutually exclusive. Many organizations will write one copy of the backup to a PBBA and a second copy to tape, known as disk-to-disk-to-tape (D2D2T). This method offers the advantage of rapid onsite data restore using the PBBA and the safety of tape offsite storage for disaster recovery (DR) or assured data survival; this process may be done either serially or in parallel. More recently, organizations have begun copying data to the cloud in a disk-to-disk-to-cloud (D2D2C) architecture. This approach offers the same data management benefits as D2D2T but can eliminate the need to handle tapes altogether.

When selecting a PBBA system, IT buyers must make a choice between a target device and an integrated device. Target devices can be used with almost any current backup/recovery software, and as such, they can be added to an existing environment seamlessly. Organizations wishing to use their existing backup software will likely choose a target device. Integrated devices have the backup/recovery software pre-installed on the appliance, so the deployment is rapid and simple. Organizations seeking the simplest implementation will likely choose an integrated appliance.

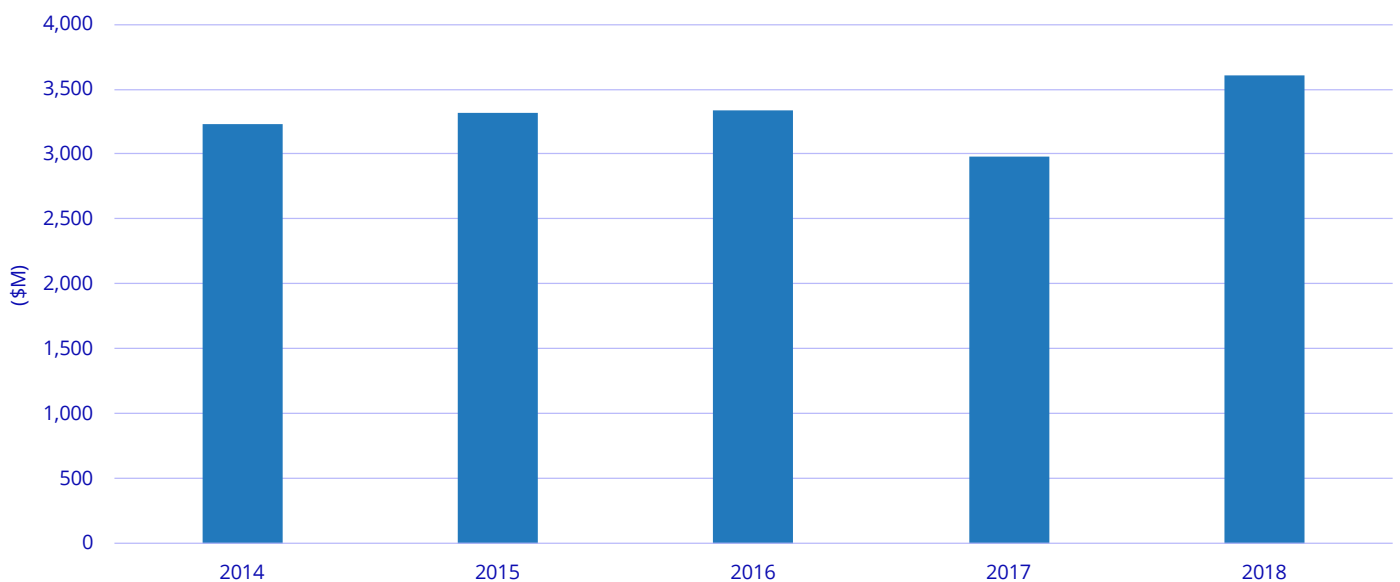
## Considerations

The primary shortcoming of PBBAs is that they really serve only one purpose, which is backup/recovery. Because the data is highly deduplicated (i.e., data fragments spread across many blocks) and often stored in the proprietary format of the backup software, the data stores are not available for additional uses such as analytics. In addition, the time needed to "rehydrate" data (i.e., reassemble it from fragmented blocks into complete blocks) may impact restore times. Fortunately, the industry is responding by adding flash storage and different architectural elements to speed data restores as well as opening up the data to secondary use cases.

## Trends

The total worldwide value of the PBBA market in 2018 was \$3.6 billion. Figure 1 shows total market value from 2014 through 2018. This value includes target and integrated devices, encompassing both hardware and software included with the devices.

FIGURE 1: **Total Worldwide PBBA Market Size, 2014–2018**

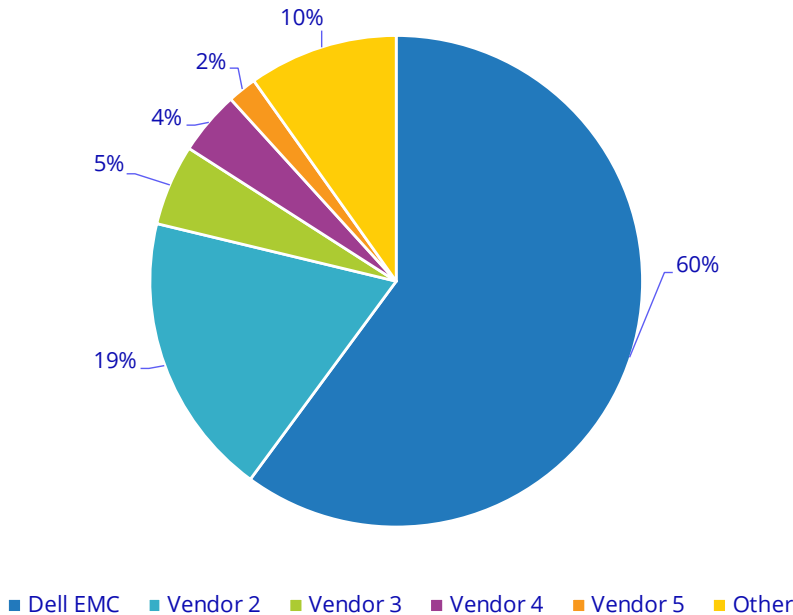


Source: IDC, 2019

Figure 1 illustrates an overall trend of steady growth for the PBBA market over time. IDC forecasts that the market will continue to maintain a 3% compound annual growth rate (CAGR). When looking at the target and integrated market segments separately, we forecast a 1.8% CAGR for target devices and 5.6% CAGR for integrated devices. Currently, target devices constitute approximately two-thirds of the overall market compared with one-third for integrated devices.

In terms of vendor market share, Figure 2 illustrates the share of the top 5 market participants by revenue in 2018. These market share figures are for the total market, including both target and integrated devices.

FIGURE 2: **PBBA Top 5 Market Share, 2018**



Source: IDC's Worldwide Quarterly Purpose-Built Backup Appliance Tracker, 4Q18

For the full-year results in 2018, Dell EMC enjoyed a 60% market share, which includes its Data Domain target devices and IDPA integrated device plus associated software. Dell EMC has been the market leader by revenue for as long as IDC has been tracking the market.

### Conclusion

PBBAs provide IT organizations with a solution to common problems associated with backup/recovery operations as well as improve service-level delivery for data restore and availability.

At \$3.6 billion in revenue value, PBBAs represent nearly one-third of the total spent by IT organizations in the backup/recovery hardware and software infrastructure (this does not include the amount spent on tape infrastructure, which IDC estimates to be less than \$1 billion).

Although PBBAs were originally designed to solve tape-related problems, they remain relevant in cloud environments by providing both rapid on-premises restore and data replication to the cloud. Throughout the history of the market, Data Domain has been the market leader, whether as a start-up more than 15 years ago or as a unit of Dell EMC today. Currently, Dell EMC has more than twice the market share of its next nearest competitor in this market.

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## About the Analyst



***Phil Goodwin, Research Director, Infrastructure Systems, Platforms, and Technologies Group***

Phil Goodwin is a Research Director within IDC's Enterprise Infrastructure practice, covering research on data management. Mr. Goodwin provides detailed insight and analysis on evolving industry trends, vendor performance, and the impact of new technology adoption. He is responsible for producing and delivering timely, in-depth market research with a specific focus on cloud-based and on-premises data protection, business continuity and disaster recovery, and data availability.

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- 2. Dell EMC Integrated Data Protection Appliance.** Pre-integrated, flash-accelerated solution in configurations ranging from 8TB to 1PB that support backup and recovery, monitoring, workflow automation, reporting and analytics. All configurations include native cloud tiering and cloud disaster recovery.
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**IDC Corporate USA**  
5 Speen Street  
Framingham, MA 01701, USA  
T 508.872.8200  
F 508.935.4015  
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