



COPY DATA

The History of Copy Data Management

November 13, 2017 By Brian Reagan

Copy Data Corner

Chapter 1: A (Brief) History of An Industry

First Generation Copy Data Management

Back in the post-financial collapse days of 2008/2009, IT faced a crisis. After years of infrastructure build-out in response to the rapid-pace 2000s, there was a significant financial, operational, and strategic challenge. Most businesses shifted rapidly to a “do more with less” mode, but their data centers and operational models weren’t right-sized for the shift. Data had proliferated far and wide. Production data had multiplied in response to the growing demands of an emerging – and fast-growing – population of “data consumers”. Operations teams had adopted vendors technology-heavy solutions, resulting in a belt-and- suspender-and- suspender-and-belt approach to data protection (backups upon backups, replicas of various shapes and sizes, snapshots and clones, etc.).



Figure 1- Copy Data Sprawl

It was in this era that Actifio and the first generation of copy data management was born. Recognizing the immediate need to offer a consolidation opportunity for these over-provisioned and under-performing IT organizations, Actifio delivered the industry's first copy data management software platform. Actifio realized that by applying similar techniques of virtualization that VMware had pioneered in compute, they could collapse the physical copy sprawl, speed the time to access read/write virtual copies, and ultimately mobilize the data across any storage, data center, and eventually, any cloud.

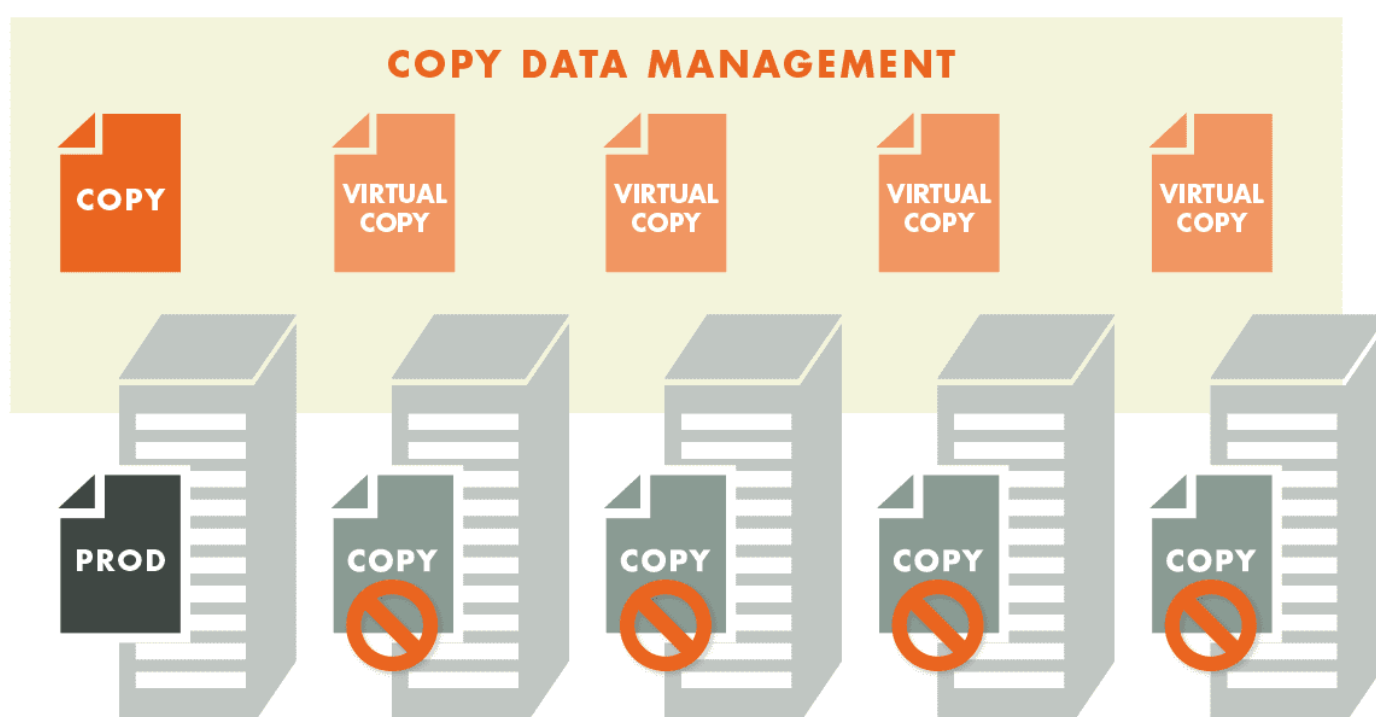


Figure 2: Actifio's First Generation Copy Data Management

Businesses that adopted copy data management realized rapid, significant savings from both storage and technology consolidation as well as operational simplification. Storage growth rates – primarily driven by the rampant growth of secondary, non-production copies – were reduced. As upgrades and/or maintenance streams due dates approached, organizations could defer or eliminate budgeted costs for growth. With fewer tools to manage, and greater flexibility of choices when it came to infrastructure, IT could put their focus back on their data and the needs of the business.

The first use-cases that many businesses focused on were in the data protection and availability arena – namely modernizing backup and disaster recovery. These domains in IT were dominated by companies and technologies that were designed and built in the 1980s, an era long-before large data sets, rapidly growing environments, open systems server virtualization, and even disk-based storage for backup and recovery. By 2009, every business had outgrown

but by 2009, most IT organizations realized that dedupe appliances were growing as fast as their data. “I love the first dedupe appliance. It’s the 20th that’s a real problem...” was a common sentiment.

Actifio’s copy data management offered a revolutionary means of modernizing these operations, consolidating the storage and appliance growth, and dramatically speeding up recovery times. Among the many breakthroughs that Actifio applied – native application/data integration. By speaking the “language” of the application, and maintaining that native format throughout its lifecycle, Actifio avoided any delay-inducing translation. And Actifio leveraged the performance of any underlying storage assigned. When a DBA wanted to recover a database from an outage or corruption event, they “time traveled” to the appropriate point, instantly mounted a read/write virtual copy to a server, and were up and running in minutes. Regardless of the data size and location.

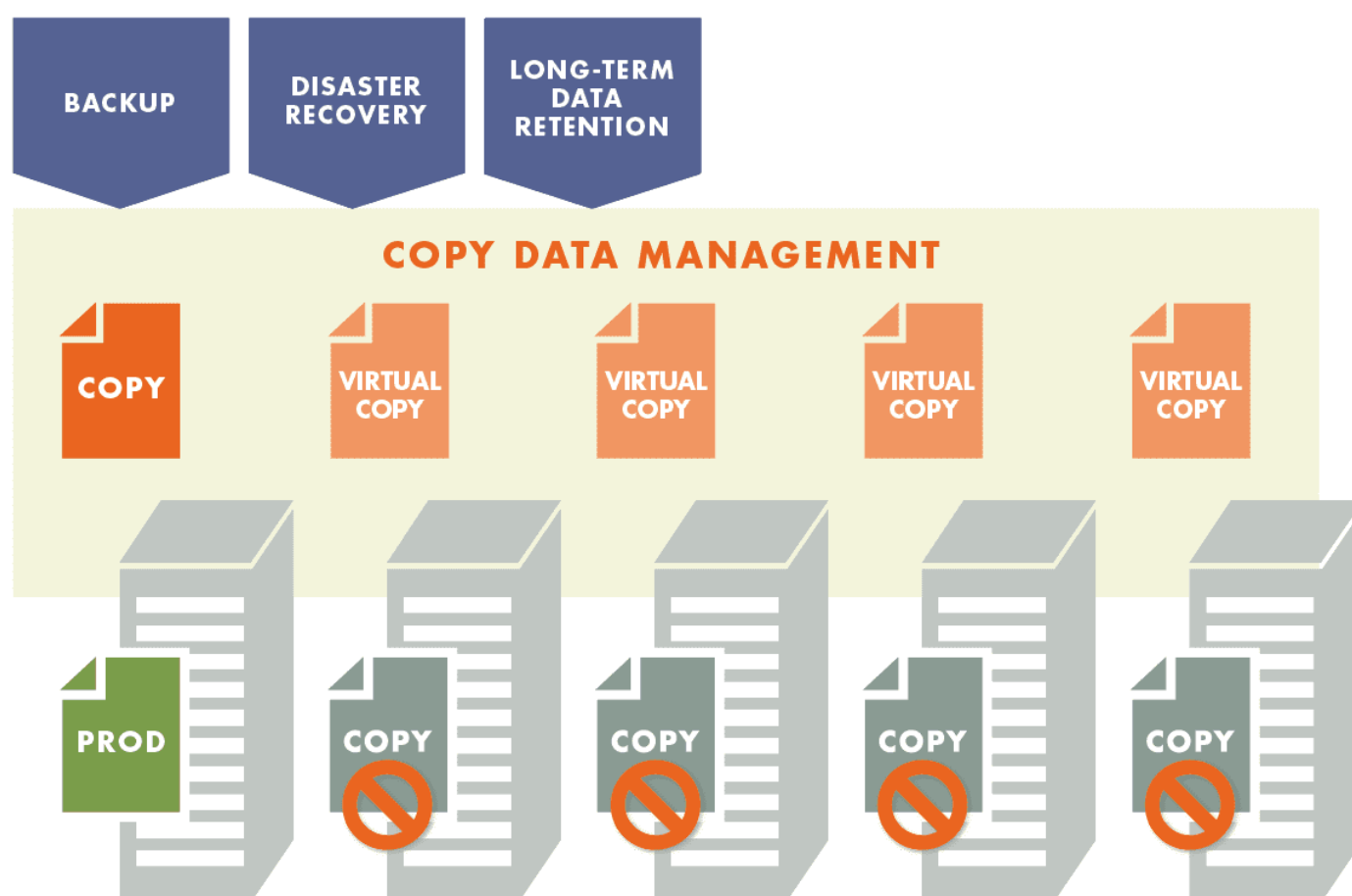


Figure 3: First Generation CDM Use Cases

Second Generation Copy Data Management, and Its Cousin, Copy Storage Management

As the legacy OEMs and ISVs in the storage and data management industry began to witness an erosion of their franchises, they realized that they needed a response. The halcyon days of built-in quarterly upgrade cycles and increasing maintenance and services revenue streams were under attack. But, much like the server vendors first response to VMware – “we’ll just sell them more servers for less!” – the response from the incumbent vendors was still infrastructure-focused: “we’ll provide a simpler mechanism to manage snapshots on the array!”. These snapshot managers still emphasized a storage-centric, not data-centric, philosophy and ultimately were yet another method to keep the storage growth train rolling. These snapshots were not application-aware. They were still bound to the array on which they were created. And, they were not suited to long retentions or point-in-time histories.

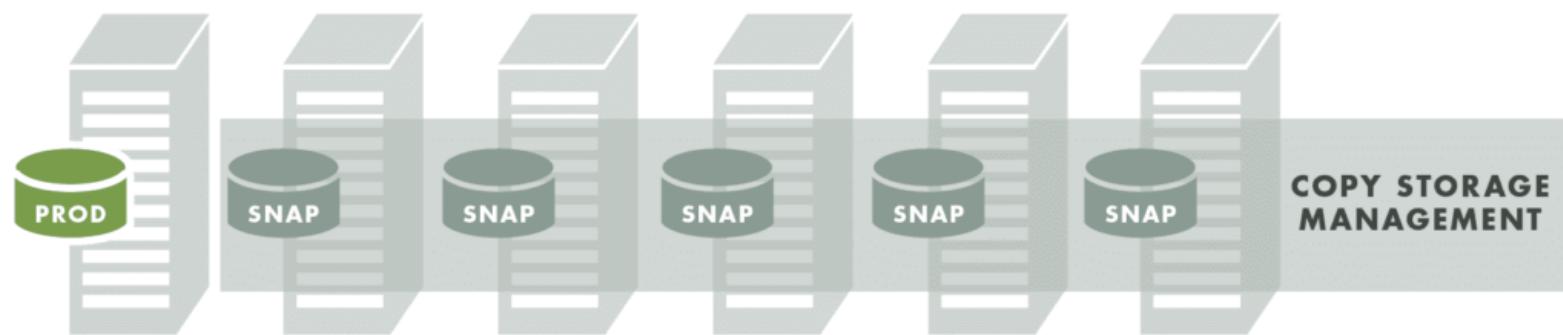
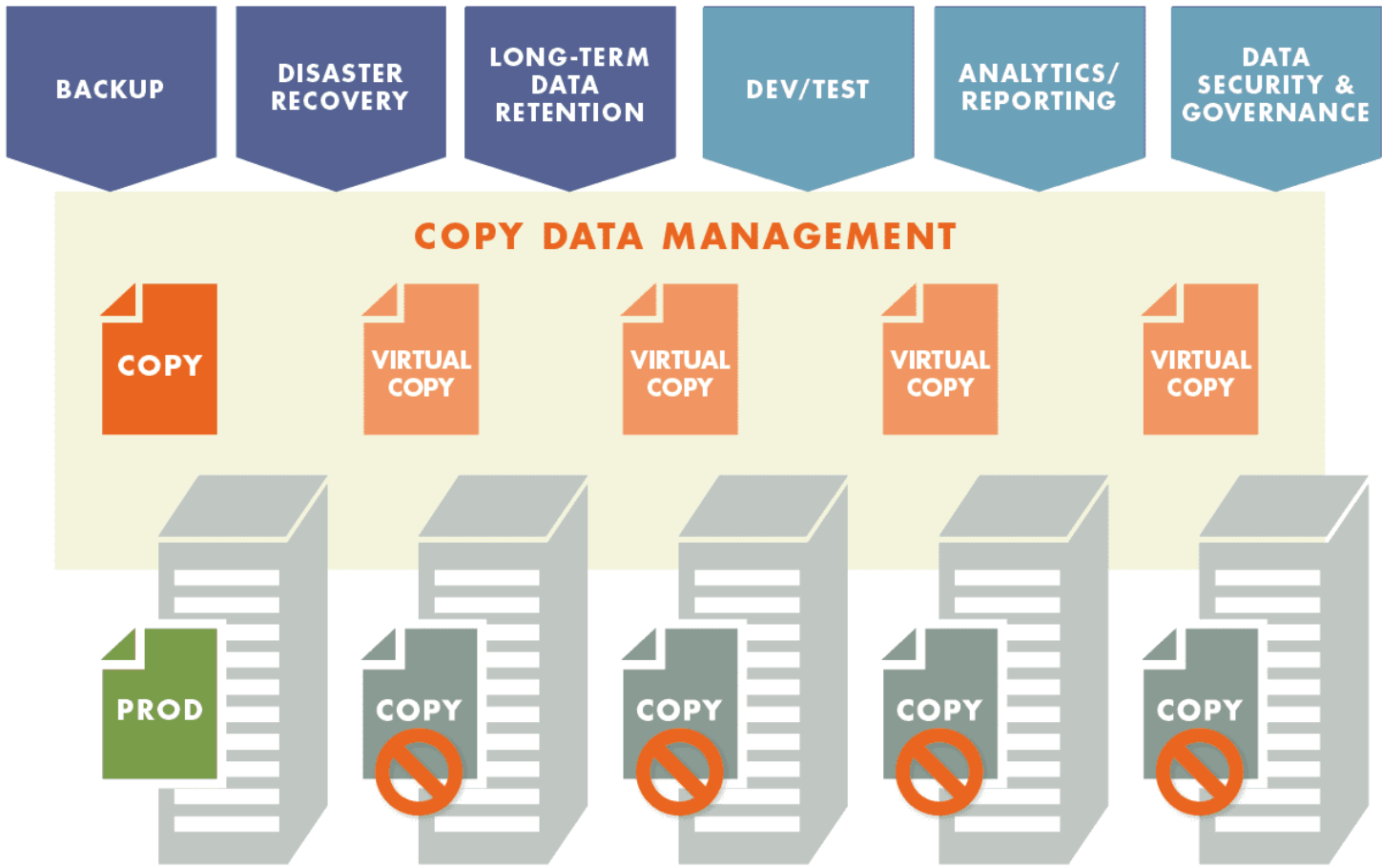


Figure 4: Copy Storage Management, a Distant Cousin of CDM

Meanwhile, many Actifio customers were becoming very creative with their copy data management platform, expanding the usage far beyond initial use cases of backup and recovery. These businesses recognized the true “art of the possible” when it came to applying virtual copies of read/write data to other parts of their business. For example, software and application development had always been a critical area in most businesses, but as the realities of 2012/2013 competitive landscape emerged, development speed and throughput became a competitive weapon and market differentiator. Many organizations moved from waterfall development lifecycles to agile. And agile shops began looking at more continuous development and integration techniques. Unfortunately, as the size of critical data sets continued to grow – mission- and franchise-critical databases grew into the 10s, even 100s, of terabytes in many organizations – the tools and processes to provision and refresh these data sets for development, test, training, and pre-production were ill-equipped to keep pace. Compromises were made, corners were cut, including reducing the size of data for development and test (called “subsetting”) or infrequently refreshing copies such that production and test copies were out of sync by weeks, months, or even quarters.

With Actifio, none of those compromises were needed. The full-size copy of production could be provisioned automatically to development and test, in a read/write format, in minutes, without creating a storage burden. And because the provisioning time was so rapid, refreshes could be done far-more frequently. Now, development organizations could collapse their development lifecycles, deliver more releases in a calendar year – with the same number of people – and deliver higher-quality code, as the testing was against uncompromised data.

After benefiting from the cost-reduction benefits of first generation Copy Data Management, these businesses began to realize material return on investment and business impact from the second-generation application of Copy Data Management. These organizations also began to witness a growing shift in the valuation of data. Production data historically was considered the most valuable in the enterprise, as it was used to “run” the day-to-day business. Increasingly, however the value of development and test data, as well as analytics and reporting, was increased, as it translated to revenue, market share, industry competitiveness, and for some firms, the difference between viability and market irrelevance.



Third-Generation Copy Data Management: Delivering Data-as-a-Service

As Actifio’s software platform continued to mature, and more enterprises worldwide began to experience the significant benefits that Copy Data Management delivered, a new horizon began to emerge: the cloud.

In our next Chapter of the Copy Data Corner, I’ll describe how Copy Data Management (CDM) became the foundation for the next-generation of an organizations data strategy. And, how the philosophy and delivery model of cloud shaped the thinking behind Actifio’s most significant platform advancement since its founding.

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Read more about Data Protection Tool Performance in Gartner’s 2017 Critical Capabilities Report for backup and recovery software

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