

THE EVOLUTION OF DIGITAL DATA STORAGE: ROLLING WITH THE CHANGES

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Enterprise storage solutions continue to evolve and innovate — as they must, to keep up with the volume, performance, and convenience demanded by modern businesses and their reliance on digital data. For most organizations, this creates a strategic need to manage digital data lifecycles across a heterogeneous mix of data types, solution categories, and deployment models.

→ **Derek E. Brink**, CISSP,
Vice President and Research Fellow,
Information Security and IT GRC



Enterprise data storage technologies have always been part of the very foundation of IT infrastructure — but this solution category is far from static. On the contrary, enterprise storage solutions continue to evolve and innovate at a rapid pace — as they must, to help keep up with the volume, performance, and convenience demanded by modern businesses and their increasing reliance on digital data.

In its research report on [*Building a Better Storage Infrastructure for the Modern Business*](#) (March 2016), Aberdeen Group described how organizations taking advantage of next-generation storage solutions — including *virtualized storage*, *cloud storage*, *unified storage*, *software-defined storage*, and *data lakes* — are realizing advantages not only in volume, performance, and convenience, but also in easier data lifecycle management and lower total cost.

Just how fast is this evolution of digital data storage taking place? Empirical enterprise adoption rates for selected types of digital data storage, as seen in Aberdeen’s benchmark research, provide useful insights into:

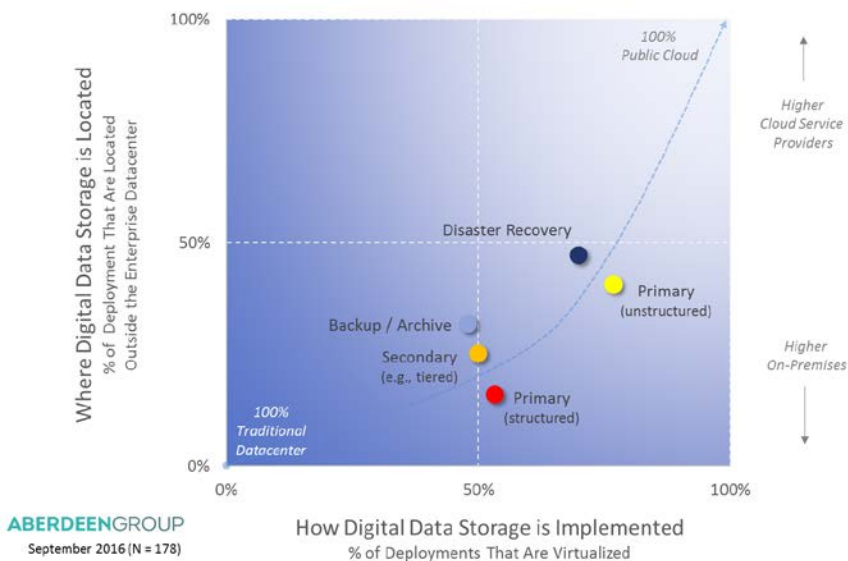
→ Related Research:
[*Building a Better Storage Infrastructure for the Modern Business*](#)

- ➔ **How storage is implemented** — i.e., on *traditional servers*, or on *virtualized systems*
- ➔ **Where storage is located** — i.e., *on-premises* in enterprise datacenters and server rooms, in the infrastructure of various *cloud service providers*, or in a *hybrid* deployment model
- ➔ **What types of data are moving more quickly to the cloud** — i.e., the different adoption rates for *primary* data (both structured, and unstructured), *secondary* data, *backup and archive*, and *disaster recovery*

A snapshot of the responses from 178 organizations responding to Aberdeen’s research survey on this topic is shown as Figure 1.

Figure 1: The Evolution of Digital Data Storage:

The More Immediate the Usage, The More Likely for Digital Data to Remain On-Premises (For Now)



Source: Aberdeen Group, September 2016

A first observation: For the respondents in Aberdeen’s study, **more than half of all digital data storage deployments are now on virtualized systems.** As noted in [The Very Real Benefits](#)

Definitions:

Traditional IT is a non-virtualized computing infrastructure, dedicated to the organization, hosted on-premises, and managed by the organization’s staff.

Traditional IT outsourcing is non-virtualized computing infrastructure, dedicated to the organization, hosted on-premises, and managed by a third-party service provider on the organization’s behalf.

Private Cloud refers to virtualized computing infrastructure, dedicated to the organization, hosted on-premises, and managed by the organization’s staff.

Managed / Hosted Private Cloud refers to virtualized computing infrastructure, dedicated to the organization, hosted by a third-party service provider, and managed by the third-party service provider on the organization’s behalf.

Public Cloud refers to virtualized computing infrastructure, available for subscription by multiple organizations, hosted by a third-party service provider, and managed by the third-party service provider on behalf of all subscribers. See also *IaaS*, *PaaS*, and *SaaS* (page 3).

Hybrid Cloud refers to a mix of Private Cloud and Public Cloud infrastructure used to support the organization’s portfolio of applications.

Definitions (continued):

Infrastructure-as-a-Service (IaaS)

provides a fully virtualized computing environment on which subscribers can host their applications and data.

Platform-as-a-Service (PaaS)

provides software services and application development interfaces in a fully virtualized computing environment, with which subscribers can develop, test, and deploy their applications and data.

Software-as-a-Service (SaaS)

provides subscribers with one or more hosted, managed applications (e.g., *DR as a Service*).

Unified storage (sometimes referred to as *federated storage*) refers to an architecture that supports both *network-attached storage* (file-based) and *storage-area networks* (block-based) from a common management platform.

Data lakes (commonly associated with object-oriented platforms such as *Hadoop*) refer to large-capacity storage repositories that hold data in its native format until it is queried.

In **software-defined** systems, *decision-making* functions (higher-level services, intelligence, and administration) are abstracted and decoupled from *delivery functions* (lower-level functionality of the infrastructure), such that control becomes directly programmable.

of Adopting Virtual Storage (June 2016), virtual storage — like virtual servers — makes it possible for organizations to significantly reduce their hardware and resource costs, while improving reliability, performance, agility, and ability to scale.

A second observation: **The more immediate the usage, the more likely for digital data to remain on-premises** in enterprise datacenters and server rooms, as opposed to on the infrastructure of third-parties or cloud service providers. In other words, Aberdeen's findings show that primary data (in *structured* form, e.g., enterprise databases) is the most likely to remain on-premises, followed by secondary data (e.g., tiered storage with less frequent access requirements), then backup / archive data, and finally disaster recovery (DR). As a category, DR is closest to the cloud — about half (48%) of all DR implementations in Aberdeen's study are cloud-based, and in a [related study](#) 61% of Best-in-Class organizations identified cloud-based backup and recovery as key elements of their business continuity initiatives.

Based on Figure 1, the exception to this second takeaway is that primary data in *unstructured* forms (i.e., files) has moved much more quickly to public cloud services — primarily because this enables enterprise users to take advantage of synching and sharing their important files from multiple locations, across multiple devices, and over multiple networks.

Summary and Key Takeaways

- ➔ The most important takeaway is that the movement of digital data storage to the public cloud is not (and should not be) based on the flip of a switch, but rather as the result of a thoughtful, deliberate, risk-based approach to how storage should be implemented and where data should be located. Different types of enterprise data have different requirements for availability, preservation, protection, compliance, modes of access, and

management throughout its respective lifecycle — and for most organizations, this means managing a heterogeneous mix of digital data storage solution categories and deployment models.

- ➔ For most organizations, therefore, the heterogeneity of data types, storage infrastructure, and deployment models also highlights the business value of working with strategic solution providers who offer a breadth of capabilities for managing their digital data storage lifecycles in the reality of this ever-changing context.

For more information on this and other research topics, please visit www.aberdeen.com.

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