

**Not all storage is the same.
How to choose the right storage
solution for your data needs.**

**An expert overview of storage
technology and options.**



White Paper by



Storage isn't as simple as it sounds.

Our world has become increasingly linked; IDC predicts that every connected person will have at least one digital data interaction every 18 seconds. With the advent of 5G, by 2025, the average person will create 4,900 digital data engagements every day.¹ That's a tremendous amount of data saved and consumed. And it's not just individuals. By 2025, 60% of the world's data will be produced by businesses.² Where will all this data get stored?

When saving photos and videos on your phone, you can run out of space quickly. You're forced to either delete items or upgrade to a new phone with a larger storage capacity. All the data on the internet also must be stored somewhere, though deleting it is usually out of the question. You have two main options—use cloud storage devices or use bare metal storage. Determining the best option depends on the kind of data you want to keep, how much data you're storing, how often it needs to be retrieved, and how you want it to be accessed.

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¹ <https://venturebeat.com/2019/12/12/how-5g-is-changing-mobile-data-traffic>. IDC Data Age, The Digitization of the World From Edge to Core

² <https://medium.com/ably-realtime/the-reality-of-megatrends-175-zb-of-data-by-2025-e3dc5b7ea30c>

To start, let's look at the four main storage types and how they differ.



Object Storage

Object storage manages data as objects in a flat, non-hierarchical structure. The objects are organized by the attributes of the files, known as the metadata, and are all stored together and labeled with unique identifiers. Object storage is often used with cloud solutions and is very fast, cost-efficient, and scalable, with a simplified architecture. There are drawbacks, as object storage can't be used to run a traditional database, you can't alter individual pieces of data, and it's not easily mounted to an OS.



Block Storage

Block storage is commonly deployed on Storage Area Networks (SANs) or other cloud storage devices. Each block in a block-level storage system can be controlled as an individual hard drive while a server operating system manages the blocks. Block storage has low latency and can provide very high input-output (I/O) performance. Additionally, programming languages can use it to read and write files. This makes it ideal for large databases, high-performance applications, and mission-critical data that need to be retrieved as fast as possible. On the downside, the storage is tied to one server at a time, it's costly, and it has a limited capacity to handle metadata.



Archive Storage

Archive storage is designed for the long-term retention of inactive or infrequently accessed data. This data must be stored for legal or compliance reasons, such as medical and financial records. As archive storage solutions are optimized for storing large amounts of data for extended periods, they often use optical disks, magnetic tape, or slow-speed hard drive disks for durability. This normally makes archive storage cheaper per gigabyte compared to other storage methods but also slower when it comes to accessing and retrieving data.



Storage Use Cases

Depending on the type of data you store, the frequency in which you retrieve it, how quickly your data demands change, your budget, and how you plan to keep your data, your use case will differ. With so many things to consider, it's no wonder storage can be very complex and challenging to navigate. The following are some everyday use cases for each type of storage.

Object Storage Use Cases

Object storage is a scalable, cost-effective storage solution. It organizes data into 'objects' using unique metadata, such as creation date, size, and custom attributes. This metadata can then be used to search for objects and implement data management and security policies. Object storage can also be integrated easily with other cloud services, including analytical tools, to support more complex data processing.

AI and Big Data Analytics

The scalability of object storage makes it ideal for AI and big data analytics, enabling users to create largescale data lakes and extract valuable insights using in-place querying and machine learning tools.

Media Content Storage and Delivery

Object storage delivers consistent performance and low latency. With its flat structure, object storage is ideal for storing and streaming multimedia content directly to websites and applications.

Cloud-Native Applications

Building a cloud-based application requires scalability. Object storage can store unlimited amounts of data and can be accessed anywhere, enabling you to scale applications easily, deploy faster, and reach more end users.

Backup and Recovery

Cloud-based object storage is well-suited to backup and recovery. It offers full and incremental backup options, with the ability to store large datasets in a scalable, secure, and durable space. Data can also be accessed and transferred easily using APIs.

Websites

Websites containing lots of data or receiving high volumes of traffic require a scalable storage solution. Object storage is ideal for such websites, as it can handle large amounts of unstructured data without sacrificing stability or performance.

Log Files

The secure nature of object storage makes it ideal for protecting log files against data loss. Such files often contain sensitive or critical information and need to be retained for compliance purposes. Object storage can also be integrated with log management or analysis tools to gain valuable insights into the system.

Block Storage Use Cases

Block storage offers a high-performance solution for storing data-intensive and mission-critical applications. It stores data as separate blocks, each with a unique identifier, and these blocks are then stored wherever it's most efficient in the environment. It has the scalability to store large datasets and provides fast access to data, making it ideal for transactional databases, virtual machines, and other resources that need to be accessed easily.



Databases

Block storage is well-suited to database storage. With low latency, consistent I/O performance, and fault tolerance, it offers a stable platform for creating efficient databases. Even when data increases, each block can be hosted on different servers for scalability and rapid access to data.

Virtual Machine File Systems (VMFS)

With its high scalability and accessibility, block storage is ideal for storing a VMFS. Store virtual machine images and snapshots in one place, scale virtual disks up or down, and migrate data easily between hosts.

RAID Arrays

RAID (redundant array of independent disks) can be combined with block storage to increase the resilience of your mission-critical applications. RAID delivers enhanced data protection by writing data to two or more drives. If one disk fails, data on the other disk(s) will replace it seamlessly, without interruption.

Data Processing

With its high scalability and performance, block storage is perfect for data processing. Because it offers a consistent view of your data, it can support applications that require multiple reads and writes and can also help to keep your data more accurate and up-to-date.

Media Rendering

As one of the highest-performing storage methods, block storage is well-suited for large file processing and rendering, such as video editing, studio production, and sound design.

Archive Storage Use Cases

Archive storage is designed for long-term data storage. It offers a cost-effective way to store infrequently accessed data, otherwise known as ‘cold data.’ Users can store large amounts of data in a secure and resilient space and retrieve it within minutes or days, depending on the volume.

Long-Term Backups

For legal and compliance reasons, the financial, healthcare, and public sectors often require data to be stored for long periods of time—sometimes several years or decades. Archive storage is ideal for this purpose, enabling huge volumes of cold data to be archived safely.

Tape Replacement

Traditionally, archive storage used magnetic tape, which offered a durable and cost-effective method of archiving cold data. Today, cloud-based archive storage replaces tape and delivers much more flexibility and simplicity but at the same cost.

Backup Strategy

Archive storage can be used as part of a resilient backup strategy. It is particularly well-suited to the 3-2-1 backup strategy, where multiple backups are stored on different storage devices, with one being stored off-site and offline. Use the archive storage solution to keep an off-site copy and protect it from malicious activities.

Data Regulations

Logs often need to be stored for legal or statistical purposes. Standard storage solutions don’t allow you to keep such files long-term, but archive storage solutions enable you to store such data for as long as it is required.



Now that we understand the types of storage, let's dive into the solutions available.

Object Storage

Standard Object Storage – S3 API

With object storage, you can store data in buckets as objects (rather than as files or blocks). This type of storage is perfect for large volumes of unstructured data such as images, videos, and audio files.

[Get started](#)

High-Performance Object Storage – S3 AP

A scalable object storage service designed to manage large data sets with intensive read-and-write operations

[Get started](#)

Block storage

Public Cloud Block Storage

File storage is a method of storing data to host and organize files in a hierarchical structure of directories and subdirectories. This type of storage is ideal for structured data such as files, web content, and collaborative work.

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Archive Storage

Cloud Archive

Save all types of data without any volume limitations: Backup, logs, photos, and videos. You get billed based on your space usage and traffic. This is the perfect solution to store significant amounts of data at a low cost.

[Get started](#)

The right solution for you

At first glance, storage may seem like a simple, one-size-fits-all topic, but it's actually a complex subject. OVHcloud sales engineers can help guide you to the right solution. Whether you're an individual with small storage needs or an enterprise that needs a vast infrastructure, OVHcloud has you covered!

OVHcloud US is a subsidiary of OVHcloud, a global player and Europe's leading cloud provider operating more than 400,000 servers within 43 data centers across four continents. For over 20 years, the company has relied on an integrated model that provides complete control of its value chain, from the design of its servers to the construction and management of its data centers, including the orchestration of its fiber-optic network. This unique approach allows it to independently cover all the uses of its 1.6 million customers in more than 140 countries. OVHcloud now offers latest generation solutions combining performance, price predictability, and total sovereignty over their data to support their growth in complete freedom.



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