



WHITEPAPER

Guide to Choosing Cloud Storage



1-866-4-MSP360
1-415-301-7773



sales@msp360.com



6425 Living Place Suite 200
Pittsburgh, PA 15206



msp360.com

Making sure you've chosen the right storage provider is critical for your long-term success and data protection. But what should you do if you're not sure where to start?

This whitepaper compares the most popular cloud storage providers (Amazon S3, Microsoft Azure, Google Cloud Storage, Wasabi, and Backblaze B2) in terms of use cases, pricing, retention periods, and additional fees for egress and API calls.

Amazon S3 Overview

Amazon S3 (Simple Storage Service) is used to store data, with access determined by the specific use case. Depending on your goals, you can choose between:

- ▶ **S3 Standard:** for frequently accessed data that should be highly available
- ▶ **S3 Intelligent-Tiering:** automatically moves data between two tiers (frequent and infrequent access) to optimize costs without impacting performance.
- ▶ **S3 Standard-Infrequent Access:** ideal for long-lived but infrequently accessed data. Lower storage cost with retrieval fees.
- ▶ **S3 One Zone-Infrequent Access:** as the name suggests, this class stores data in a single availability zone instead of multiple zones, making it cheaper but less resilient.
- ▶ **S3 Glacier Instant Retrieval:** for highly accessible archives. Provides greater flexibility in storage management and efficiently reduces costs, and it became the most cost-effective and immediately accessible tool for long-term storage.
- ▶ **S3 Glacier Flexible Retrieval:** a perfect solution for long-term storage and data archiving that doesn't require instant access. The service allows you to store large or small volumes of data at a low cost. However, the retrieval process may take several hours.
- ▶ **S3 Glacier Deep Archive:** designed for long-term data archiving. The fastest retrieval time is up to 12 hours, while the longest option (bulk retrieval) can take up to 48 hours.

Amazon S3 Pricing

	S3 Standard	S3 Intelligent-Tiering	S3 Standard-Infrequent Access	S3 One Zone-Infrequent Access	S3 Glacier Instant Retrieval	S3 Glacier Flexible Retrieval	S3 Glacier Deep Archive
Price Per 1 TB	from \$23	\$10-\$23	\$12.50	\$10	\$4	\$3.60	\$0.99
API Calls	Paid	Paid	Paid	Paid	Paid	Paid	Paid
Data Egress Fee	Free	Paid	Paid	Paid	Paid	Paid	Paid
Minimum Retention Period	—	—	30 days	30 days	90 days	90 days	180 days

Benefits of Amazon S3

- ▶ **Pay-as-you-go:** you only pay for what you use.
- ▶ **Scalability:** you can store any amount of data because S3 is fully elastic and automatically scales up or down based on your needs.
- ▶ **Highest durability and availability rate:** S3 is designed to provide 99.999999999% data durability and 99.99% availability by default.
- ▶ **High security standards:** S3 is secure, private, and encrypted by default
- ▶ **Free tier:** Amazon S3 offers a 12-month free trial, which includes 5 GB of S3 Standard storage, 20,000 GET requests, 2,000 PUT/COPY/POST/LIST requests, and 100 GB of data transfer per month.

Wasabi Hot Cloud Storage Overview

Wasabi specializes in hot cloud storage, fast, low-cost, reliable cloud storage, meaning you can access similar features and integrate with S3-based tools and services. However, Wasabi doesn't have an extensive storage tiering and ecosystem like Amazon does.

Wasabi Hot Cloud Storage Pricing

Wasabi Hot Cloud Storage	
Price Per 1 TB	\$7.99
API Calls	Free
Data Egress Fee	Free
Minimum Retention Period	- 90 days (default) - PAYG pricing model - 30 days - RCS pricing model

Benefits of Wasabi Hot Cloud Storage

- ▶ **Low and predictable pricing:** Wasabi is significantly more affordable than comparable alternatives and doesn't charge extra for essential activities like data ingress or egress, API operations, or transaction fees (e.g., GET, PUT, or transitions).
- ▶ **High durability:** Wasabi offers 99.999999999% object durability.
- ▶ **Strong security standards:** Wasabi Hot Cloud Storage ensures automatic encryption of all storage at rest and requires TLS for data transmission. The infrastructure is highly secure, fully redundant, and certified for SOC 2 and ISO 27001 compliance.
- ▶ **Fully S3-compatible:** Wasabi supports the AWS S3 API, ensuring seamless integration with applications, backup solutions, and tools that are compatible with S3 storage.

Backblaze B2 Overview

Backblaze B2 is an affordable and scalable cloud storage solution ideal for developers, SMBs, and backup use cases.

Backblaze B2 Pricing

Backblaze B2	
Price Per 1 TB	\$6
API Calls	Paid
Data Egress Fee	Paid
Minimum Retention Period	-

Benefits of Backblaze B2

- ▶ **Affordable Solution:** a storage option that costs roughly 1/3 of AWS S3, with free API calls and free egress for up to 3x the amount of data stored.
- ▶ **Reliable and Durable Storage:** provides 99.999999999% data durability, ensuring data integrity, with automatic replication across multiple servers.
- ▶ **Free Data Migration Options:** the Backblaze Fireball service simplifies the migration of large data sets to B2.
- ▶ **S3-compatible:** fully supports the AWS S3 API.

Microsoft Azure Overview

Azure Storage is a highly scalable and secure storage solution offered by Microsoft. It integrates seamlessly with Azure services, making it a go-to option for Microsoft ecosystem users.

Microsoft Azure Pricing

	Microsoft Azure Hot Storage	Microsoft Azure Cool Storage	Microsoft Azure Cold Storage	Microsoft Azure Archive Storage
Price Per 1 TB	\$18	\$10	\$3.6	\$0.99
API Calls	Paid	Paid	Paid	Paid
Data Egress Fee	Free	Paid	Paid	Paid
Minimum Retention Period	—	30 days	90 days	180 days

Benefits of Microsoft Azure

- ▶ **Seamless integration with Microsoft products:** Azure works natively with Windows Server, Active Directory, Microsoft 365, and SQL Server.
- ▶ **Strong hybrid cloud capabilities:** Azure Hybrid Cloud solutions enable seamless integration between on-premises infrastructure and the cloud.
- ▶ **AI, Machine Learning and Big Data Analytics:** Azure AI, Machine Learning, and Power BI provide advanced data analytics and automation.
- ▶ **Pay-as-you-go:** you only pay for what you use.
- ▶ **S3-compatible:** offers Azure Blob Storage for object storage.

Google Cloud Overview

Google Cloud Storage is a scalable, secure, and high-performance cloud storage solution designed for developers, enterprises, and big data applications. It offers global redundancy, object storage with multiple tiers (Standard, Nearline, Coldline, Archive), and advanced integration with Google's AI.

Google Cloud offers various tiers that cater to different needs:

- ▶ **Standard:** best for data that's frequently accessed or actively managed.
- ▶ **Nearline:** Google Cloud Nearline storage is designed for cool data that is used once per month or less frequently. Nearline Storage keeps its data stored within one region and is cheaper compared to the Standard storage.
- ▶ **Coldline:** a cold-tier storage for archival data with access frequency of less than once per year.
- ▶ **Archive:** Archive storage is the lowest-cost, highly durable storage service for data archiving, online backup, and disaster recovery. Unlike the "coldest" storage services offered by other cloud providers, your data is available within milliseconds, not hours or days.

Google Cloud Pricing

	Google Cloud Standard	Google Cloud Nearline	Google Cloud Coldline	Google Cloud Archive
Price Per 1 TB	\$23	\$16	\$7	\$2.5
API Calls	Paid	Paid	Paid	Paid
Data Egress Fee	Depends on the case	Depends on the case	Depends on the case	Depends on the case
Minimum Retention Period	—	No for standard, yes for others	No for standard, yes for others	No for standard, yes for others

Benefits of Google Cloud

- ▶ **Advanced AI and Machine Learning Tools:** Google Cloud provides powerful AI and ML capabilities, including pre-built models and APIs, to help businesses develop smart applications and gain insights from data.
- ▶ **Big Data and Analytics:** Google Cloud offers robust tools for data storage, processing, and analysis, such as BigQuery, making it easy to work with large datasets and derive actionable insights.
- ▶ **Open Source Compatibility:** Google Cloud supports a variety of open-source technologies, making it easy to integrate with existing systems and maintain flexibility in choosing software solutions.

Comparisons and Key Takeaways

Let’s compare these cloud storage providers based on several factors like pricing, global presence, security, and best use cases:

Pricing Comparison

- ▶ Wasabi and Backblaze B2 offer the most affordable storage options.
- ▶ Both stand out with free API calls, and both offer free egress (Wasabi with no limits; Backblaze B2 for up to 3x your monthly storage).
- ▶ In contrast, AWS, Azure, and Google Cloud charge for egress and API calls.

Data Centers Location

	Number of Data Centers	Global Coverage
Amazon S3	30+	Worldwide
Wasabi	13	North America, Europe, Asia-Pacific
Backblaze B2	5	US, Europe, Asia-Pacific
Microsoft Azure	60+	Worldwide
Google Cloud	35+	Worldwide

What it means for users: The more global coverage a cloud vendor has, the better. Without a multi-region presence, there could be issues with faster access and redundancy.

Best cases: AWS, Azure, and Google (with worldwide data centers), and Wasabi (with strategically placed data centers).

	Amazon S3	Wasabi	Backblaze B2	Microsoft Azure	Google Cloud
Object Lock (Immutability)	✓	✓	✓	✓	✓
Governance Mode	✓	✗	✗	✗	✗
Compliance Mode	✓	✓	✓	✓	✓
Retention Policy at Object Level	✓	✓	✓	✗	✗
Legal Hold	✗	✗	✗	✓	✓

Let us briefly explain what these data security features mean:

- ▶ **Object Lock (Immutability):** provides complete immunity to any changes to data. Immutable data backups are copies of a dataset that cannot be modified, deleted, or overwritten. This mechanism ensures that a backup dataset is safely locked away from any type of alteration. It has two modes: Governance and Compliance.
- ▶ **Governance Mode:** allows privileged users to override or delete locked data (requires special permissions).
- ▶ **Compliance Mode:** prevents deletion or modification by anyone, even root users, until the retention period expires.
- ▶ **Retention Policy:** time-based retention locks data for a specific period, preventing modifications.
- ▶ **Legal Hold:** prevents deletion indefinitely until the hold is removed.

Best Use Cases Based on Pricing and Features

- ▶ AWS: Best for enterprises.
- ▶ Wasabi, Backblaze B2: Ideal for cost-conscious businesses and MSPs.
- ▶ Microsoft Azure: Best suited for users within the Microsoft ecosystem.
- ▶ Google Cloud: Best for AI, ML, and big data applications.

How to Make a Final Decision

- ▶ Consider the long-term: Choose a solution that avoids vendor lock-in.
- ▶ Validate features: Ensure the solution meets your compliance requirements.
- ▶ Be cost-conscious: Pay attention to pricing to avoid overspending.

About MSP360

Established in 2011 by a group of IT professionals, MSP360™ provides simple and reliable cutting-edge Backup and IT management solutions for MSPs and IT departments worldwide.

MSP360™ platform combines the number one easy-to-use backup solution to deliver best-in-class data protection, secure remote access software to provide support to customers or team members, and painless RMM to handle all aspects of IT infrastructures, all under a single pane of glass.

