Amazon S3 FAQs

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Q: What is Amazon S3?

Amazon S3 is storage for the Internet. It's a simple storage service that offers software developers a highly-scalable, reliable, and low-latency data storage infrastructure at very low costs.

Q: What can I do with Amazon S3?

Amazon S3 provides a simple web services interface that you can use to store and retrieve any amount of data, at any time, from anywhere on the web. Using this web service, developers can easily build applications that make use of Internet storage. Since Amazon S3 is highly scalable and you only pay for what you use, developers can start small and grow their application as they wish, with no compromise on performance or reliability. It is designed to be highly flexible: Store any type and amount of data that you want; read the same piece of data a million times or only for emergency disaster recovery; build a simple FTP application, or a sophisticated web application such as the Amazon.com retail web site. Amazon S3 frees developers to focus on innovation, not figuring out how to store their data.

Q: How can I get started using Amazon S3?

To sign up for Amazon S3, click the "Sign up for This Web Service" button on the Amazon S3 detail page. You must have an Amazon Web Services account to access this service; if you do not already have one, you will be prompted to create one when you begin the Amazon S3 sign-up process. After signing up, please refer to the Amazon S3 documentation and sample code in the Resource Center to begin using Amazon S3.

Q: What are the technical benefits of Amazon S3?

Amazon S3 was carefully engineered to meet the requirements for scalability, reliability, speed, low-cost, and simplicity that must be met for Amazon's internal developers. Amazon S3 passes these same benefits onto any external developer. More information about the Amazon S3 design requirements is available on the Amazon S3 detail page.

Q: What can developers do now that they could not before?

Until now, a sophisticated and scalable data storage infrastructure like Amazon's has been beyond the reach of small developers. Amazon S3 enables any developer to leverage Amazon's own benefits of massive scale with no up-front investment or performance compromises. Developers are now free to innovate knowing that no matter how successful their businesses become, it will be inexpensive and simple to ensure their data is quickly accessible, always available, and secure.

Q: What kind of data can I store?

You can store virtually any kind of data in any format. Please refer to the Amazon Web Services Licensing Agreement or details.

Q: How much data can I store?

Individual Amazon S3 objects can range in size from 1 byte to 5 gigabytes. The number of objects you can store is unlimited.

Q: Where is my data stored?

Amazon S3 offers storage in the US Standard, EU (Ireland), and US-West (Northern California) Regions. You specify a Region when you create your Amazon S3 bucket. Within that Region, your objects are redundantly stored on multiple devices across multiple facilities.

Q: How do I decide which Region to store my data in?

There are several factors to consider based on your specific application. You may want to store your data in a Region that…

...is near to your customers, your data centers, or your other AWS resources in order to reduce data access latencies.

...is remote from your other operations for geographic redundancy and disaster recovery purposes.

...enables you to address specific legal and regulatory requirements.

...allows you to reduce storage costs. You can choose a lower priced Region to save money. Please see the pricing section on the S3 detail page.

Q: What does Amazon do with my data in Amazon S3?

Amazon will store your data and track its associated usage for billing purposes. Amazon will not otherwise access your data for any purpose outside of the Amazon S3 offering, except when required to do so by law. Please refer to the Amazon Web Services Licensing Agreement for details.

Q: Does Amazon store its own data in Amazon S3?

Yes. Developers within Amazon use Amazon S3 for a wide variety of projects. Many of these projects use Amazon S3 as their authoritative data store, and rely on it for business-critical operations.

Q: How much does Amazon S3 cost?

With Amazon S3, you pay only for what you use. There is no minimum fee. You can estimate your monthly bill using the AWS Simple Monthly Calculator.

We charge less where our costs are less. Some prices vary across Amazon S3 Regions and are based on the location of your bucket. There is no Data Transfer charge for data transferred within an Amazon S3 Region via a COPY request. Data transferred via a COPY request between Regions is charged at regular rates. There is no Data Transfer charge for data transferred between Amazon EC2 and Amazon S3 within the same Region or for data transferred between the Amazon EC2 Northern Virginia Region and the Amazon S3 US Standard Region. Data transferred between Amazon EC2 and Amazon S3 across all other Regions (i.e. between the Amazon EC2 Northern California and Amazon S3 US Standard Regions) will be charged at Internet Data Transfer rates on both sides of the transfer.*

For S3 pricing information, please visit the pricing section on the S3 detail page.

* All Data Transfer In is free through June 30th 2010 (i.e. $0.00 per GB).

Q: Why do prices vary depending on which Amazon S3 Region I choose?

We charge less where our costs are less. For example, our costs are lower in the US Standard Region than in the Northern California Region.

Q: How will I be charged and billed for my use of Amazon S3?

There are no set-up fees or commitments to begin using the service. At the end of the month, your credit card will automatically be charged for that month's usage. You can view your charges for the current billing period at any time on the Amazon Web Services web site, by logging into your Amazon Web Services account, and clicking "Account Activity" under "Your Web Services Account".

Amazon S3 charges you for the following types of usage:

Storage Used: In the US Standard Region, $0.150 per GB for storage for the first 50 TB, $0.140 per GB for the next 50 TB, $0.130 per GB for the next 400 TB, $0.105 per GB for the next 500 TB, $0.080 per GB for the next 4000 TB, and $0.055 per GB for storage used over 5000 TB in Amazon S3 in a month.

In the EU (Ireland) Region, $0.150 per GB for storage for the first 50 TB, $0.140 per GB for the next 50 TB, $0.130 per GB for the next 400 TB, $0.105 per GB for the next 500 TB, $0.080 per GB for the next 4000 TB, and $0.055 per GB

for storage used over 5000 TB in Amazon S3 in a month.

In the Northern California Region, $0.165 per GB for storage for the first 50 TB, $0.155 per GB for the next 50 TB, $0.145 per GB for the next 400 TB, $0.120 per GB for the next 500 TB, $0.095 per GB for the next 4000 TB, and $0.070 per GB for storage used over 5000 TB in Amazon S3 in a month.

The GB of storage billed in a month is the average storage used throughout the month. This includes all object data and metadata stored in buckets that you created under your account. We measure your usage in "TimedStorage-ByteHrs," which are added up at the end of the month to generate your monthly charges.

Storage Used Example:
You keep 2,684,354,560 bytes (or 2.5 GB) of data in your bucket for 15 days in March, and 1,342,177,280 bytes (or 1.25 GB) for 16 days.

At the end of March:
Total Byte-Hour usage = [2,684,354,560 bytes x 15 days x (24 hours / day)] + [1,342,177,280 bytes x 16 days x (24 hours / day)] = 1,481,763,717,120 Byte-Hours.

Conversion to Total GB-Months
1,481,763,717,120 Byte-Hours x (1 GB / 1,073,741,824 bytes) x (1 month / 744 hours) = 1.85 GB-Months

Total charge if stored in the US Standard Region = 1.85 GB-Months x ($0.15 / GB-Month) = $0.28.

Total charge if stored in the EU (Ireland) Region = 1.85 GB-Months x ($0.18 / GB-Month) = $0.33.

Total charge if stored in the Northern California Region = 1.85 GB-Months x ($0.165 / GB-Month) = $0.31.

Network Data Transferred:

(i) All Data Transfer In is free through June 30th 2010 (i.e. $0.00 per GB). After July 1st 2010, Data Transfer In is $0.10 per GB.

This represents the amount of data sent to Amazon S3. This charge applies whenever data is written to any of your buckets. This charge is the same for buckets in the US Standard, EU (Ireland), and Northern California Regions.

Transfer In Example:
You upload one 500 MB file to Amazon S3 each day during a 31 day month.

Total Data Transfer In for the month = 500 MB x (1 GB / 1024 MB) x 31 days = 15.14 GB

Total Charge through June 30th 2010 = 15.14 GB x ($0.00 / GB) = $0.00

Total Charge after July 1st 2010 = 15.14 GB x ($0.10 / GB) = $1.52

(ii) $0.170 per GB data transfer out for the first 10 TB, $0.130 per GB for the next 40 TB, $0.110 per GB for the next 50 TB, and $0.100 for all remaining data transfer out of Amazon S3 in a month
The amount of data retrieved from Amazon S3. This charge applies whenever data is read from any of your buckets. This charge is the same for buckets in the US Standard, EU (Ireland), and Northern California Regions, although volume discounts apply separately to the various Regions.

Transfer Out Example:
You transfer one 500MB file out of Amazon S3 each day during the month of March.

Total Data Transfer Out for the month = 500 MB x (1 GB / 1,024 MB) x 31 days = 15.14 GB

Total charge = 15.14GB x ($0.170 / GB) = $2.57

Requests: For US Standard buckets, $0.01 per 1,000 PUT and LIST operations, and $0.01 per 10,000 GET operations and all other requests (except DELETE operations, which are free of charge). For EU (Ireland) buckets, $0.012 per 1,000 PUT and LIST operations, and $0.012 per 10,000 GET operations and all other requests (except DELETE operations, which are free of charge). For Northern California buckets, $0.011 per 1,000 PUT and LIST operations, and $0.011 per 10,000 GET operations and all other requests (except DELETE operations, which are free of charge).

Request Example:
You transfer 1,000 files into Amazon S3 and transfer 2,000 files out of Amazon S3 each day during the month of March, and delete 5,000 files on March 31st.

Total PUT requests = 1,000 requests x 31 days = 31,000 requests

Total GET requests = 2,000 requests x 31 days = 62,000 requests

Total DELETE requests = 5,000×1 day = 5,000 requests

Total charge for requests to US Standard Region = 31,000 x ($0.01 / 1,000) + 62,000 x ($0.01 / 10,000) + 5,000 x $0 = $0.310 + $0.062 = $0.38

Total charge for requests to EU (Ireland) Region buckets = 31,000 x ($0.012 / 1,000) + 62,000 x ($0.012 / 10,000) + 5,000 x $0 = $0.372 + $0.074 = $0.45

Total charge for requests to Northern California Region buckets = 31,000 x ($0.011 / 1,000) + 62,000 x ($0.011 / 10,000) + 5,000 x $0 = $0.341 + $0.068 = $0.41

Q: How is Amazon S3 data organized?

Amazon S3 is a simple key-based object store. When you store data, you assign a unique object key that can later be used to retrieve the data. Keys can be any string, and can be constructed to mimic hierarchical attributes.

Q: How do I interface with Amazon S3?

Amazon S3 provides simple, standards-based REST and SOAP web services interfaces that are designed to work with any Internet-development toolkit. The operations are intentionally made simple to make it easy to add new distribution protocols and functional layers.

Q: How secure is my data?

Amazon S3 uses proven cryptographic methods to authenticate users. It is your choice to keep your data private, or to make it publicly accessible by third parties. If you would like extra security, there is no restriction on encrypting your data before storing it in Amazon S3.

Q: How reliable is Amazon S3?

Amazon S3 gives any developer access to the same highly scalable, reliable, fast, inexpensive data storage infrastructure that Amazon uses to run its own global network of web sites. The service was designed for 99.99% availability, and carries a service level agreement providing service credits if a customer's availability falls below 99.9%.

Q: What data consistency model does Amazon S3 employ?

Amazon S3 buckets in the Northern California and EU (Ireland) Regions provide read-after-write consistency for PUTS of new objects and eventual consistency for overwrite PUTS and DELETES. Amazon S3 buckets in the US Standard Region provide eventual consistency.

Q: What happens if traffic from my application suddenly spikes?

Amazon S3 was designed from the ground up to handle traffic for any Internet application. Pay-as-you-go pricing and unlimited capacity ensures that your incremental costs don't change and that your service is not interrupted. Amazon S3's massive scale enables us to spread load evenly, so that no individual application is affected by traffic spikes.

Q: What is the BitTorrent™ protocol, and how do I use it with Amazon S3?

BitTorrent is an open source Internet distribution protocol. Amazon S3's bandwidth rates are inexpensive, but BitTorrent allows developers to further save on bandwidth costs for a popular piece of data by letting users download from Amazon and other users simultaneously. Any publicly available data in Amazon S3 can be downloaded via the BitTorrent protocol, in addition to the default client/server delivery mechanism. Simply add the ?torrent parameter at the end of your GET request in the REST API.

Q: Does Amazon S3 offer a Service Level Agreement (SLA)?

Yes. The Amazon S3 SLA provides for a service credit if a customer's monthly uptime percentage is below our service commitment in any billing cycle. More information can be found here.

Q: Can I comply with EU data privacy regulations using Amazon S3?

Objects stored in the EU (Ireland) Region never leave the EU unless you transfer them out. However, it is your responsibility to ensure that you comply with EU privacy laws.

Q: I'm not in the US or Europe; can I use Amazon S3?

Anyone can use Amazon S3. You just have to decide which Region you want Amazon S3 to store your data in.

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