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**Question 1**

Amazon’s Simple Storage Service (S3) is an object storage service; objects are stored as key/value pairs. Objects can be added or read from S3 either through the web console or through RESTful API.

Read the following documentation of inserting an object into an S3 bucket

<https://docs.aws.amazon.com/AmazonS3/latest/API/API_PutObject.html>

and answer the following questions

1. What content type is supported by S3 in the put object operation?

**All standard MIME type.**

1. How does S3 ensure payload integrity viz. the object that is uploaded, especially large object, has not been corrupted.

**S3 supports the checking via Content-MD5 and ETag to verify the checksum.**

**By using checksum mechanism to verify that the data received is the same data that was originally sent. Put operation will receive the checksum from the sender and compare with the checksum generated by the data that the put operation received.**

1. What other algorithms (wrt b) does S3 support? How are these algorithms specified?

**CRC32, CRC32C, SHA1, SHA256.**

**The algorithms are specified via the x-amz-sdk-checksum algorithm by specifying the algorithm used and it also is expecting the corresponding x-amz-checksum or x-amz-trailer header.**

**Alternatively, you can also specify using the individual x-amz-checksum-<Algorithm> parameter.**

1. How does S3 ensure content confidentiality?

**S3 supports server side encryption via the x-amz-server-side-encryption-\* URI parameters.**

1. What strategy does this operation use to support S3 features (eg. encryption, storage classes, etc.) when an object is uploaded?

In your opinion, how are new S3 features supported by this operation?

**S3 allows the use of AWS key Management Service to manage the encryption keys. S3 also allows specifying the request payer parameter to assign the actual payer who will pay for the charges.**

1. How does the put operation support caching?

**By using Cache-Control parameter.**

1. How does the operation ensure that all the required parameters (eg. bucket name, encryption key, credentials, etc.) are correct be committing to the put operation?

**By making use of the expect 100-continue.**

1. What are the main differences between this operation (PutObject) and PostObject (<https://docs.aws.amazon.com/AmazonS3/latest/API/RESTObjectPOST.html>)

**POST only can use content-type multipart/form-data, whereas PUT can use any kind of content-type. POST theoritically could also be used to upload multiple files.**

1. S3 charges includes egress, viz. amount of data transferred out from a S3 bucket. If your server is using S3 for data storage, how do you reduce your S3 charges?

**Enabling cache.**

**Submission**

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