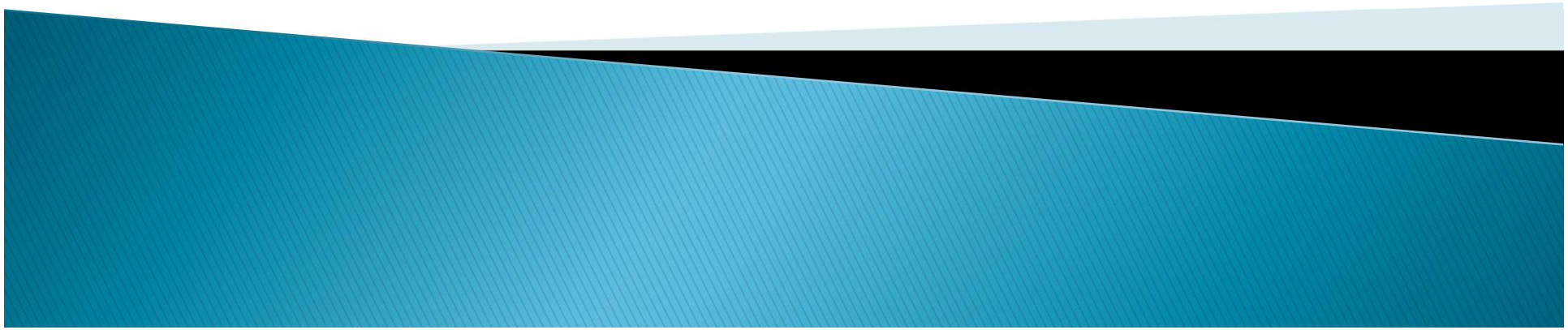
Amazon S3



AWS

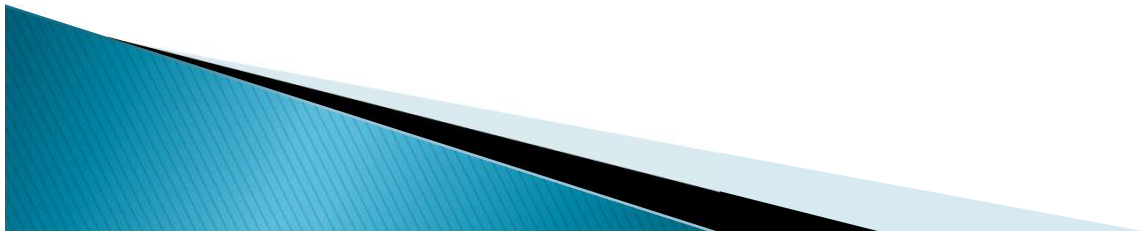
- Amazon Web Services (AWS) offers a suite of cloud-computing services that make up an on-demand computing platform.
- Designed for high redundancy, high availability and low latency.
- Services: EC2, S3
- Offers more than 70 services
- to provide large computing capacity quicker and cheaper than a client company building an actual physical server farm.

Amazon S3

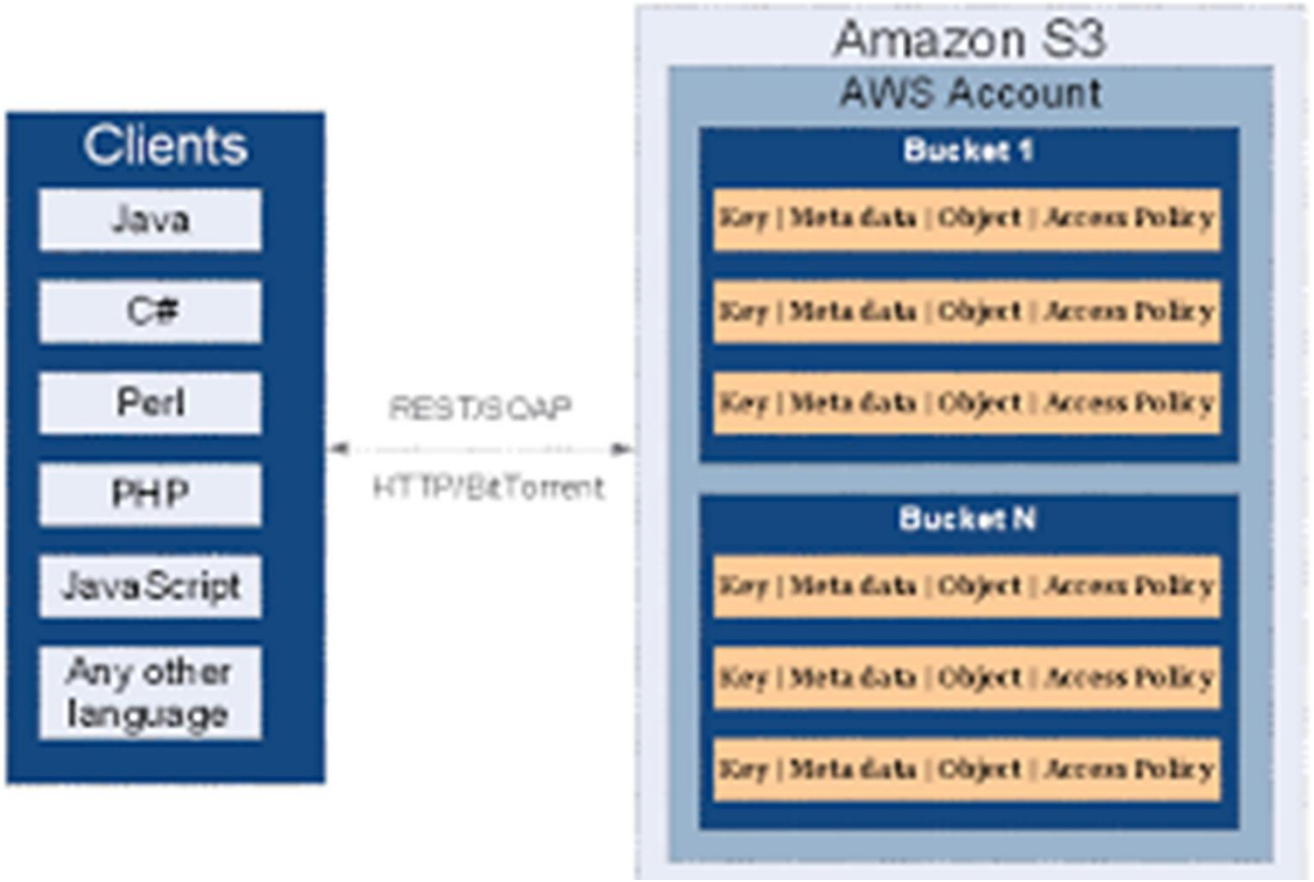
- S3 stands for Simple Storage Service
- online file storage web service offered by Amazon Web Services
- Amazon launched S3, its first publicly available web service, in the United States in March 2006[2] and in Europe in November 2007
- Provided through web services interfaces(REST and SOAP)
- Based on the same infrastructure Amazon uses for its global network of websites

Design

- details of S3's design not public
- Uses object storage architecture
- Allows unlimited storage of objects/files containing of 1 byte to 5 TB each.
- each object accompanied by up to 2 kilobytes of metadata
- Objects are organized into buckets.



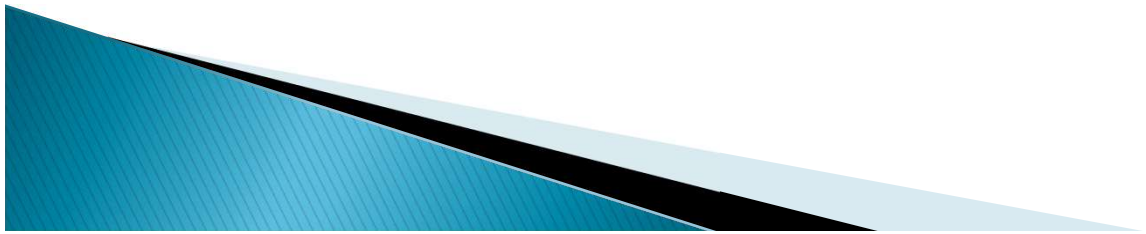
Design


Clients
Java
C#
Perl
PHP
JavaScript
Any other language
REST/SOAP
HTTP/BitTorrent
Amazon S3
AWS Account
Bucket 1
Key | Meta data | Object | Access Policy
Key | Meta data | Object | Access Policy
Key | Meta data | Object | Access Policy
Bucket N
Key | Meta data | Object | Access Policy
Key | Meta data | Object | Access Policy
Key | Meta data | Object | Access Policy

Design

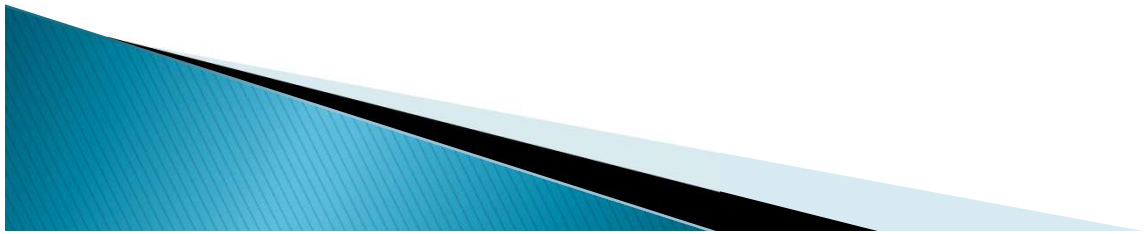
- Each bucket is owned by AWS account
- identified within each bucket by a unique, user-assigned key
- Requests are authorized using an access control list associated with each bucket and object

- Buckets and objects can be created, listed, and retrieved using either a REST-style HTTP interface or a SOAP interface
- objects can be downloaded using the HTTP GET interface and the BitTorrent protocol



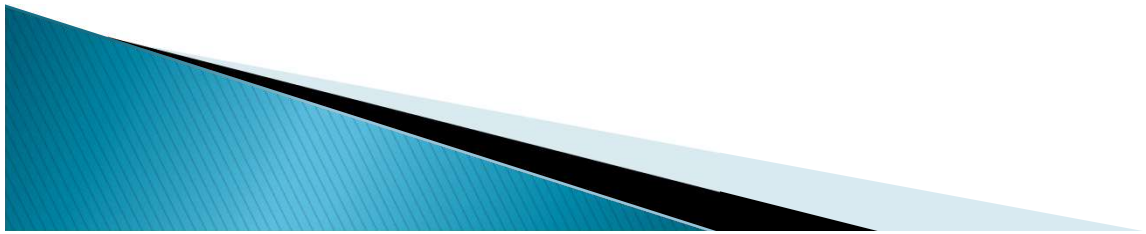
Buckets

- Buckets are used to partition the namepaces of objects at the highest level
- Buckets are similar to Internet domain names. They are accessed via bucketname.s3.amazonaws.com
- There is a limit on number of buckets each developer can have. Usually 100.



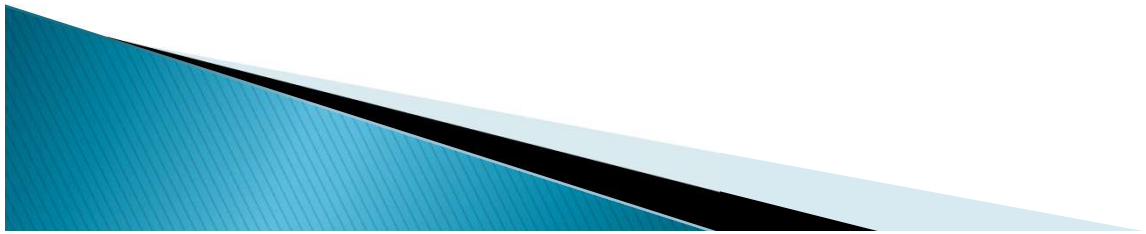
Objects

- A key is the unique identifier for an object within a bucket.
- A bucket and key together uniquely identify each object in S3.
- For example, if your bucket name is mybucket and key is myhomepage.html, the URL for the object will be http://mybucket.S3.amazonaws.com/myhomepage.html



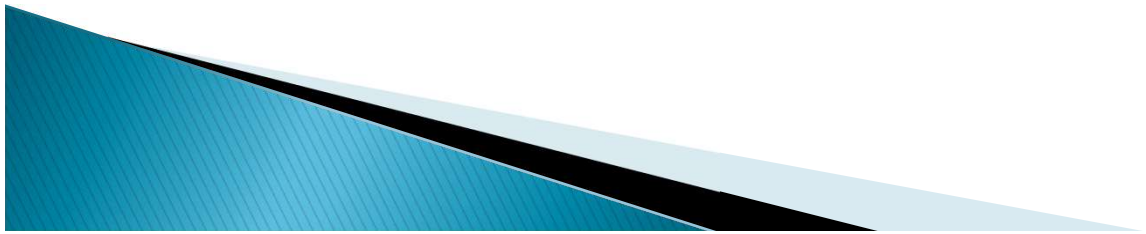
Amazon EC2

- EC2 stands for Elastic Compute Cloud
- Think of it as CPU/OS while S3 is hard disk.
- Provides a web server computing environment, allowing you to create AMI containing your applications, library, data etc.
- Designed to be very scalable like S3.



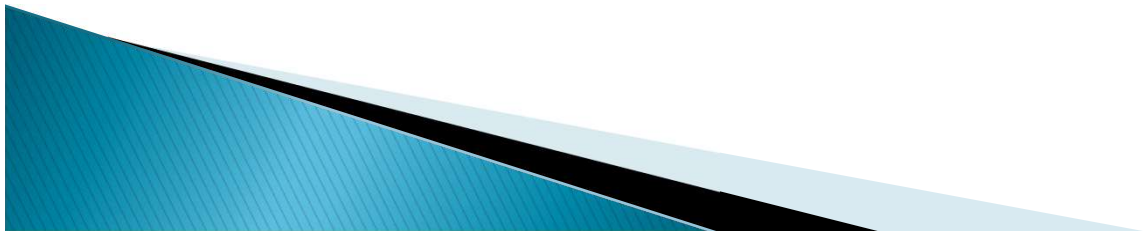
Advantages

- Scalability
- Availability
- Unlimited Storage
- Inexpensive and Capital outlay
- Accessible from any location



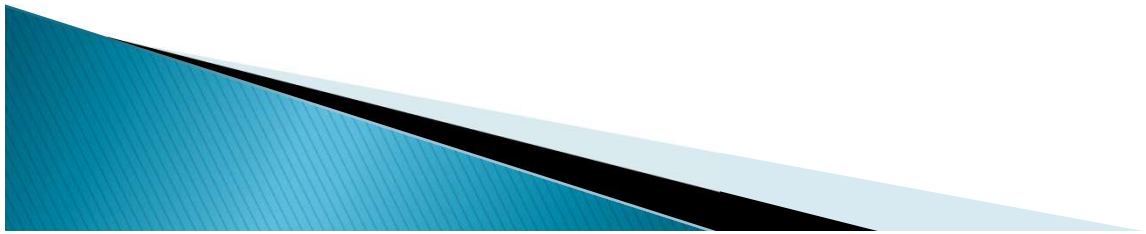
Disadvantages

- Not user-friendly
- UI-less
- Trust issues
- Back in 2007 and 2008, had speed issues



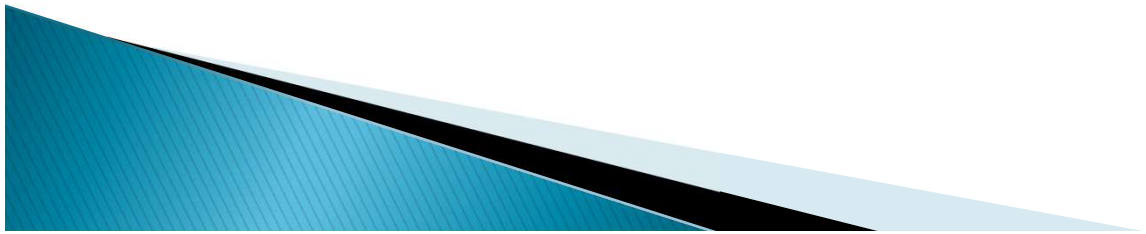
Requirements

- To get started with S3, an AWS account is needed.
- And then sign up for S3 service
- A credit card needs to be associated with the account
- You will be given an Access Key ID and secret Access Key on successful creation



Pricing

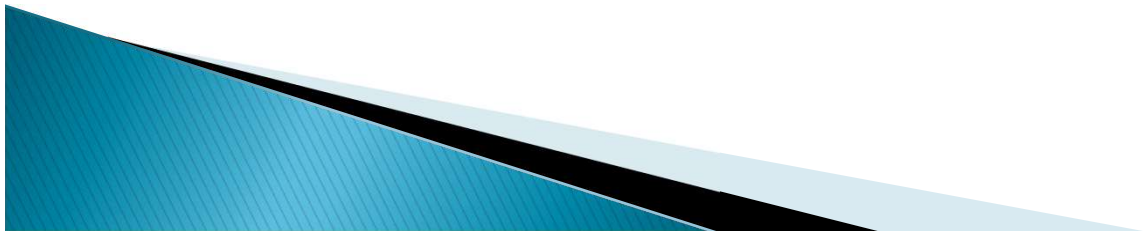
- Charges for using S3 is based on the location of your buckets.
- You are billed according to storage, data transfer in and out and the number of requests per month
- There is no minimum fee to use S3
- Can view your current charges incurred on S3 portal
- Detailed usage report in csv or xml format.



Implementation

- To start using S3, get hold of your Access Key ID and Secret Access Key
- Next, get hold of an application capable of managing S3. Here are few resources:

  Spaceblock, S3 Web interface, S3 Firefox Organizer
- Applications make objects more manageable due to directory structure similar to windows exlporer.



Uses

- HTML Microsites
- Flash Microsites
- Media Storage
- Backups

- No server side processing should be in S3 as they will not work without web servers