Academic Year: 2021-2022 **Semester: VIII**
Subject: Cloud Computing Lab **Class / Branch / Division: BE/CMPN A**
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Experiment No:5

Aim:- Storage as Service

Theory:

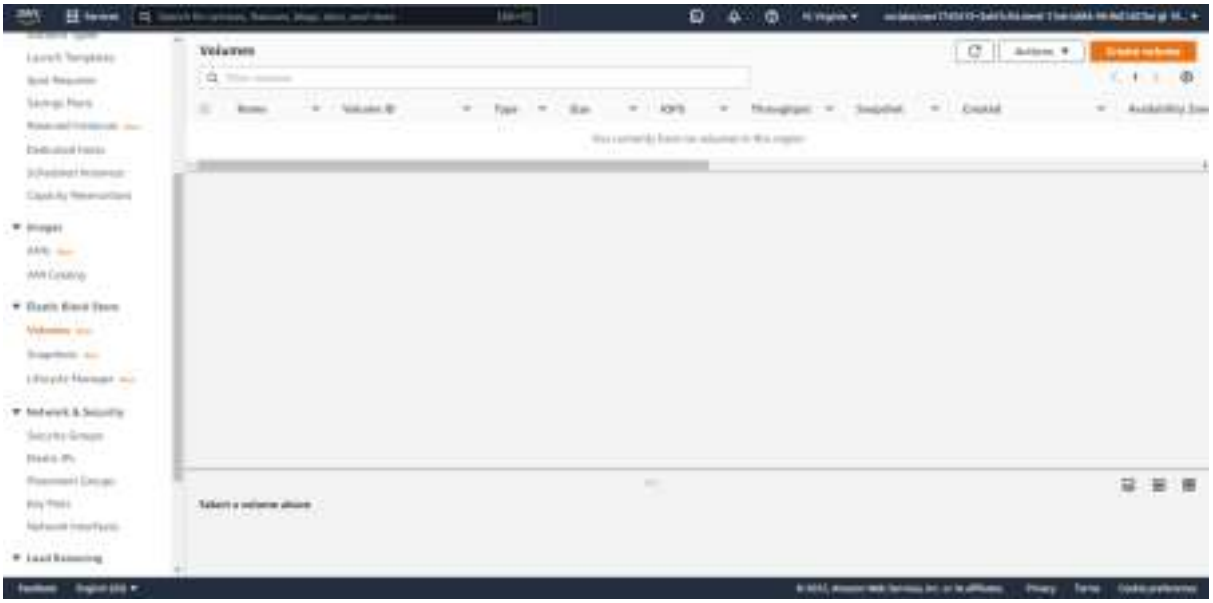
1. Cloud Storage
Cloud storage is a cloud computing model that stores data on the Internet through a cloud computing provider who manages and operates data storage as a service. · It's delivered on demand with just-in-time capacity and costs, and eliminates buying and managing your own data storage

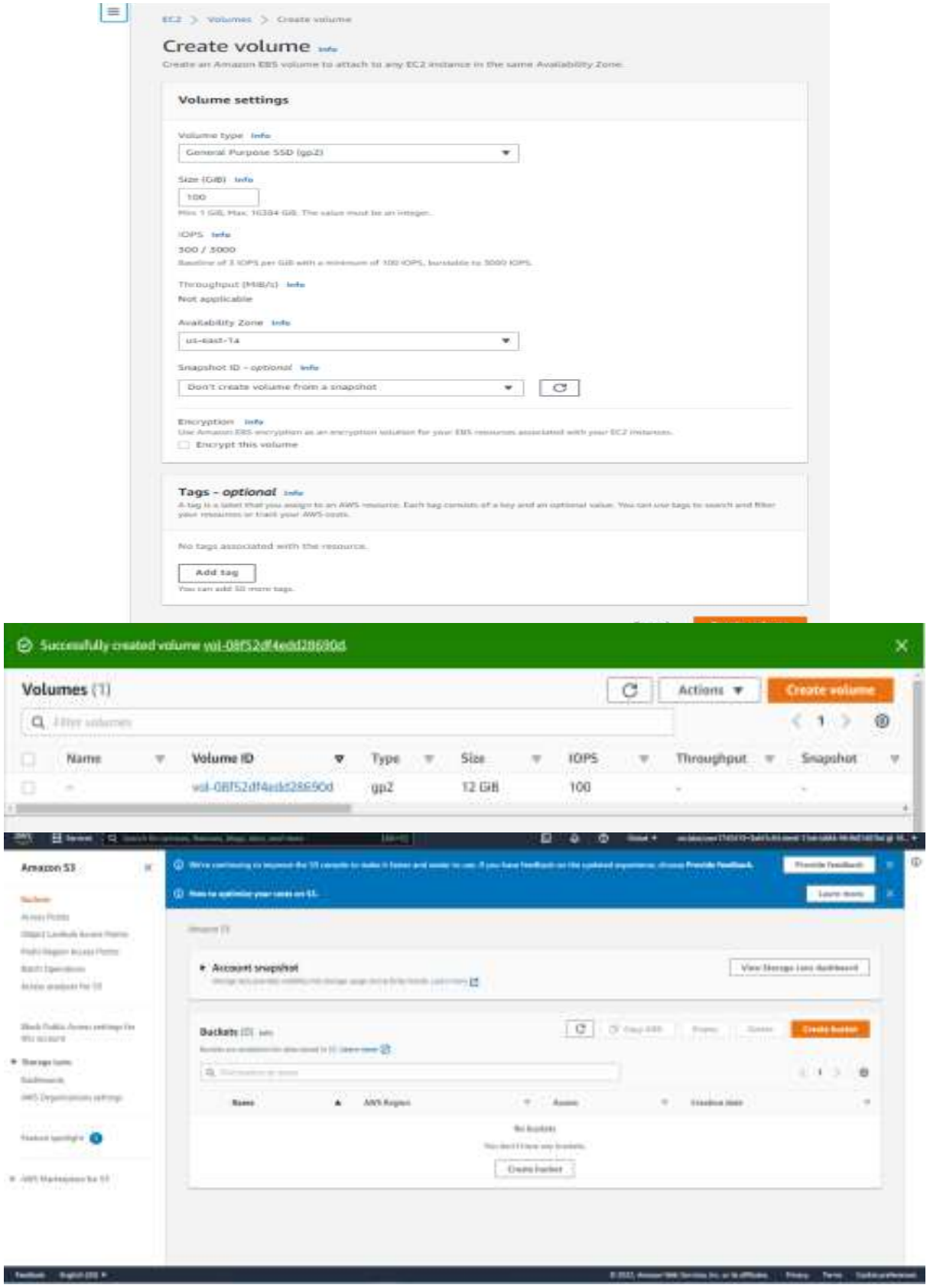
2. How Does Cloud Storage Work?
Cloud storage is purchased from a third party cloud vendor who owns and operates data storage capacity and delivers it over the Internet in a pay-as-you-go model. · These cloud storage vendors manage capacity, security and durability to make data accessible to your applications all around the world.

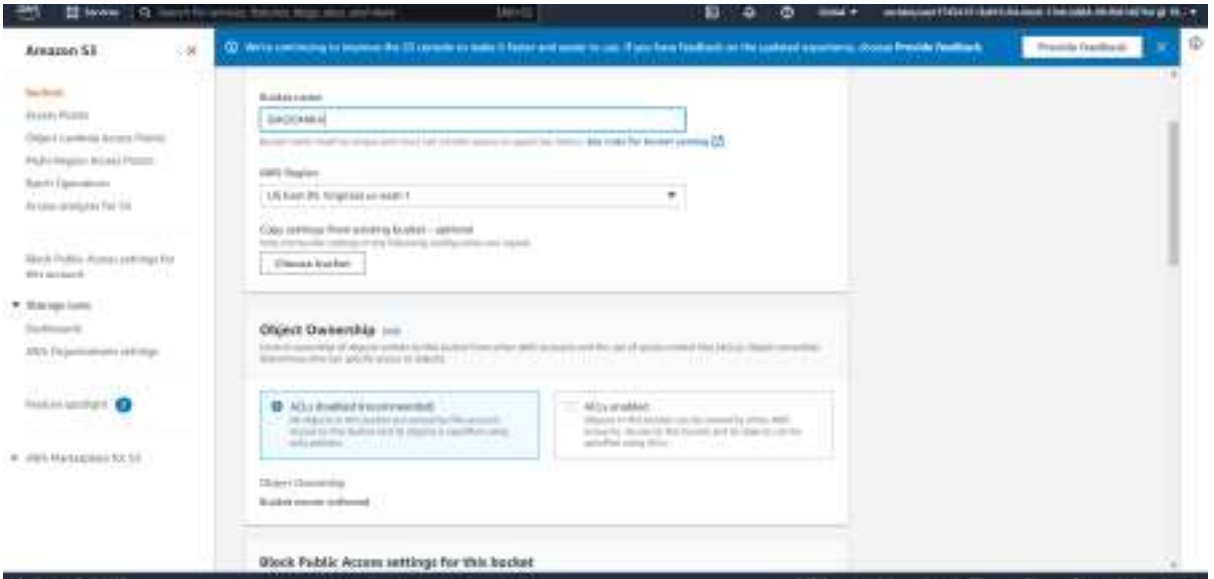
3. Feature of Cloud Storage
- ·**Resources Pooling:** It means that the Cloud provider pulled the computing resources to provide services to multiple customers with the help of a multi-tenant model. There are different physical and virtual resources assigned and reassigned which depends on the demand of the customer.
- ·**On-Demand Self-Service:** It is one of the important and valuable features of Cloud Computing as the user can continuously monitor the server uptime, capabilities, and allotted network storage. With this feature, the user can also monitor the computing capabilities.
- ·**Easy Maintenance:** The servers are easily maintained and the downtime is very low and even in some cases, there is no downtime. Cloud Computing comes up with an update every time by gradually making it better.
- ·**Large Network Access:** The user can access the data of the cloud or upload the data to the cloud from anywhere just with the help of a device and an internet connection. These capabilities are available all over the network and accessed with the help of the internet.
- ·**Availability:** The capabilities of the Cloud can be modified as per the use and can be extended a lot. It analyzes the storage usage and allows the user to buy extra Cloud storage if needed for a very small amount.
- **Security:** Cloud Security is one of the best features of cloud computing. It creates a snapshot of the data stored so that the data may not get lost even if one of the servers gets damaged.

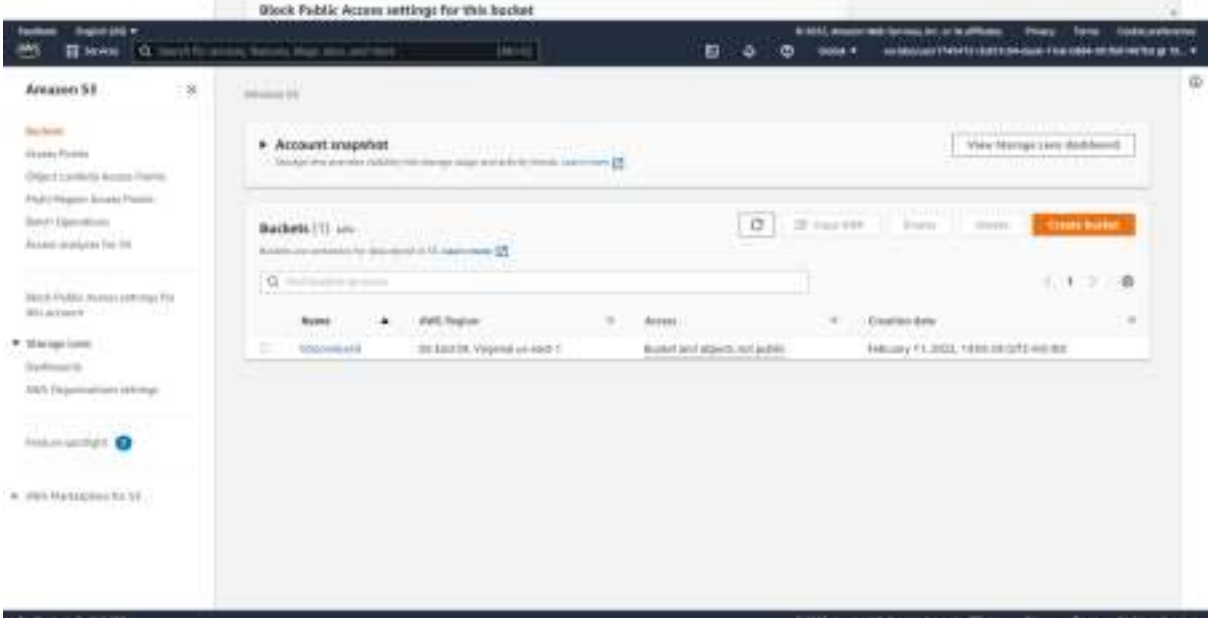
4. Benefits of Cloud Storage
- Usability and accessibility
- Security
- Cost-efficient Convenient sharing of files Multiple users Scalable Disaster recover

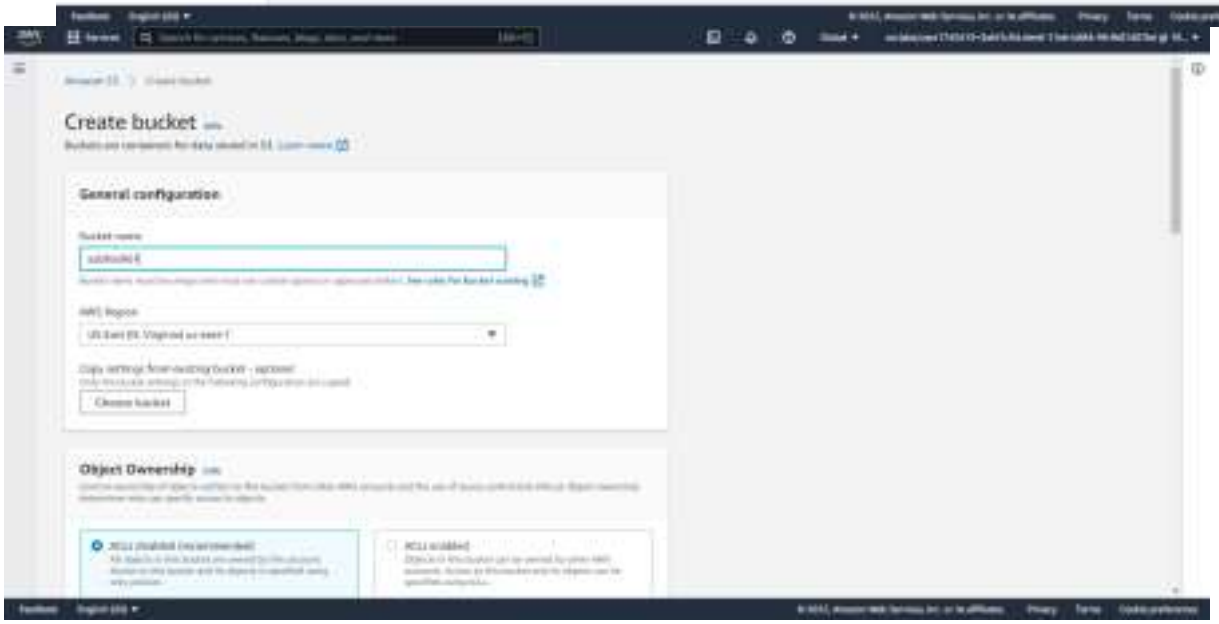
Implementation:

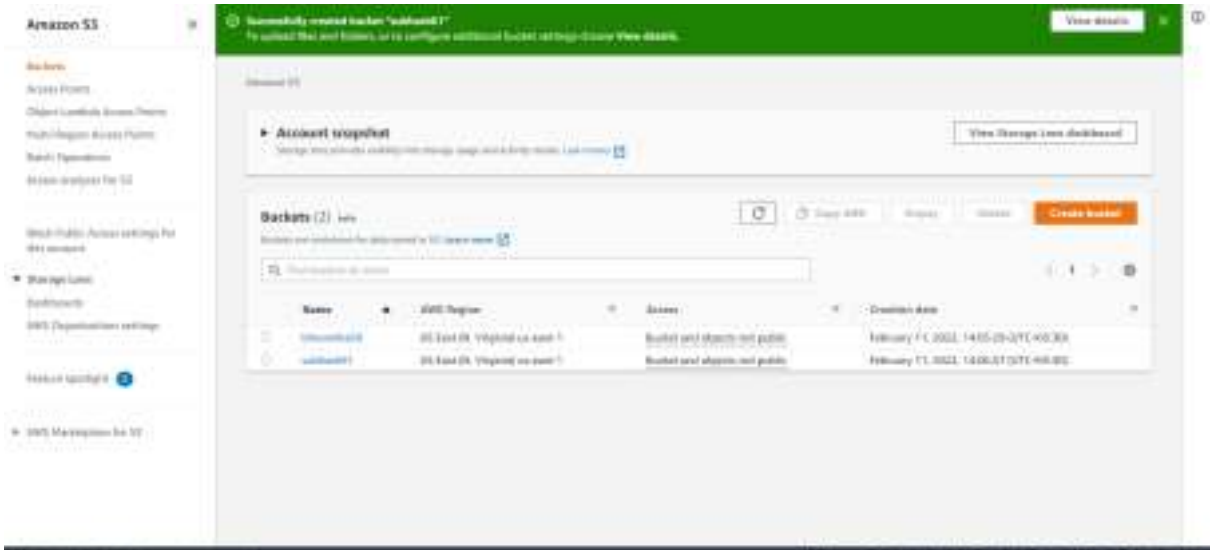


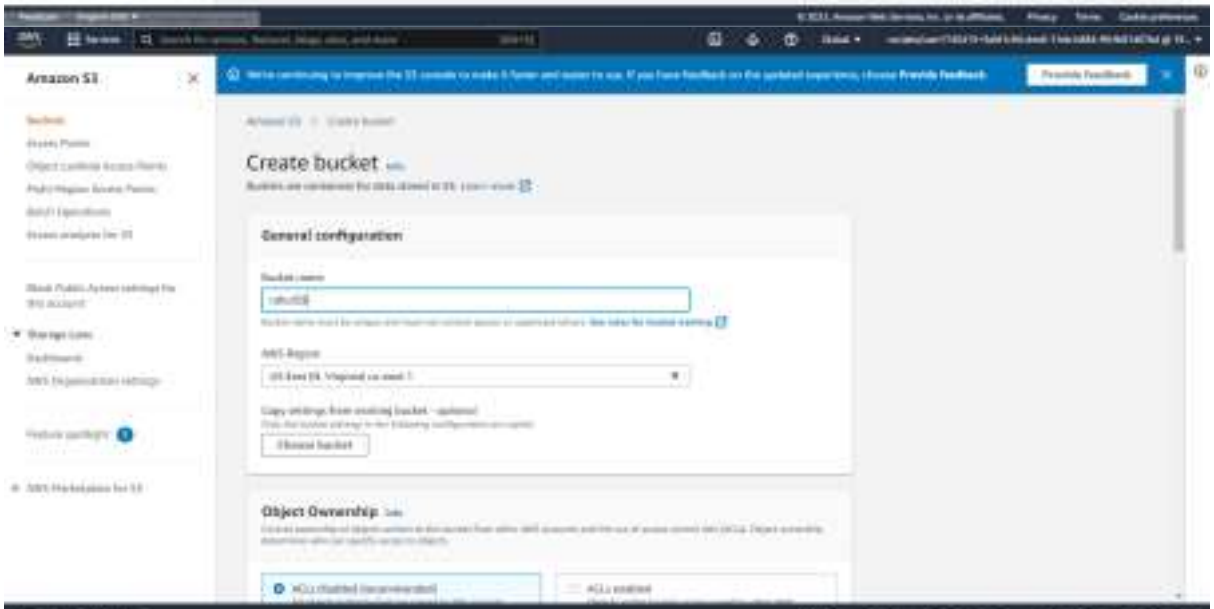

EC2 > Volumes > Create volume
Create volume Info
Create an Amazon EBS volume to attach to any EC2 instance in the same Availability Zone.
Volume settings
Volume type Info
General Purpose SSD (gp2)
Size (GiB) Info
100
Min: 1 GiB, Max: 16384 GiB. The value must be an integer.
IOPS Info
300 / 3000
Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS.
Throughput (MiB/s) Info
Not applicable
Availability Zone Info
us-east-1a
Snapshot ID - optional Info
Don't create volume from a snapshot
Encryption Info
Use Amazon EBS encryption as an encryption solution for your EBS resources associated with your EC2 instances.
Encrypt this volume
Tags - optional Info
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.
No tags associated with the resource.
Add tag
You can add 50 more tags.
Successfully created volume vol-08f52df4edd28680d
Volumes (1)
Actions
Create volume
Name
Volume ID
Type
Size
IOPS
Throughput
Snapshot
vol-08f52df4edd28680d
gp2
12 GiB
100
Amazon S3
Account snapshot
Buckets (0) Info
Create bucket
Name
AWS Region
Access
Creation date
No buckets
Create bucket

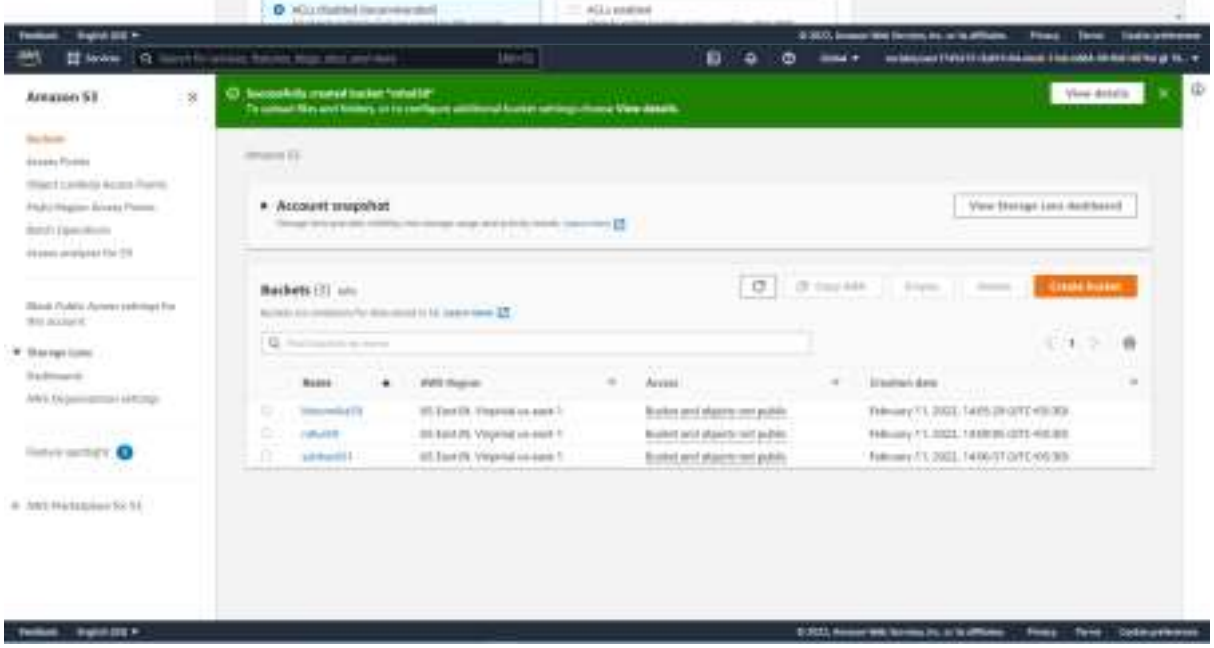

Amazon S3
Object Ownership
Block Public Access settings for this bucket

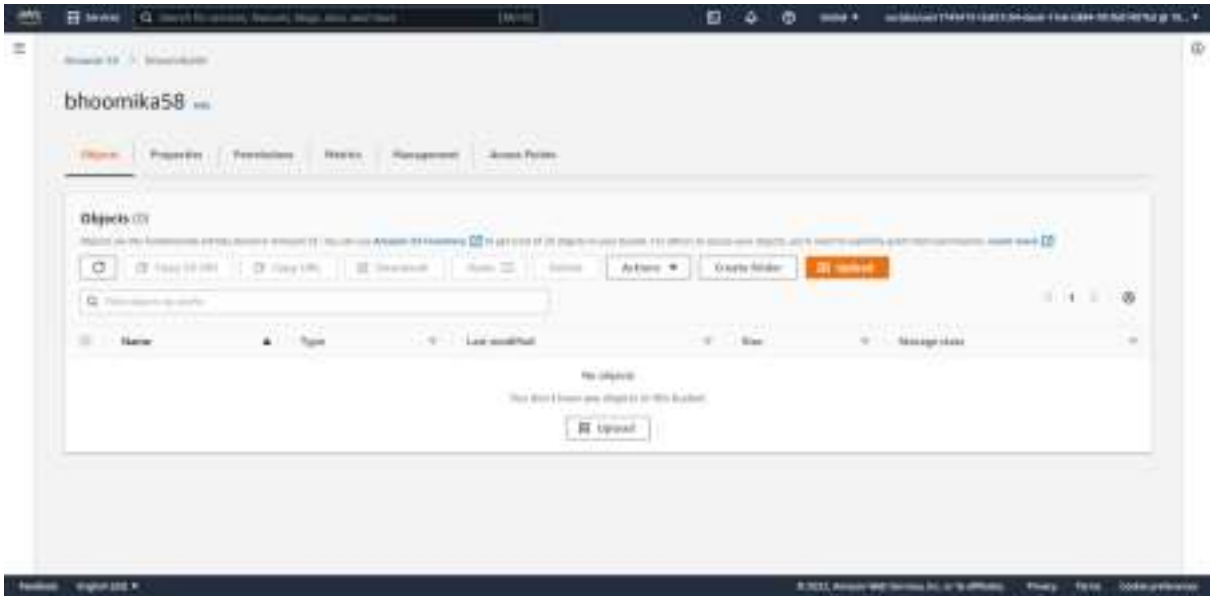

Amazon S3
Account snapshot
Buckets


Create bucket
General configuration
Object Ownership


Amazon S3
Account snapshot
Buckets (2)
Create bucket


Amazon S3
Create bucket
General configuration
Object Ownership


Amazon S3
Account snapshot
Buckets (3)
Create bucket



Conclusion:

1. What Is Storage as a Service?

storage as a service (STaaS) is a data storage business model where a provider rents storage resources to a customer through a subscription. STaaS saves you money through operating expenditure (OpEx) agility—you only pay for the storage you need, when you need it.

2. Why Use Storage as a Service?

Buying new storage capacity can be an expensive capital expenditure (CapEx), especially if you aren't sure how much capacity you'll need in the future. You can try to predict the growth of your business and purchase with the future in mind, but it can tie up financial resources that might have more impact elsewhere in your business.

Fortunately, there's no shortage of major tech companies with large data centers that are willing to sell their excess capacity. For these businesses, storage is just another service that's part of their expansive product offerings, and they're more than happy to absorb the expenses of managing, upgrading, and maintaining large-scale storage area networks (SANs). Amazon Web Services (AWS), Microsoft Azure, Google Cloud, and Oracle Cloud are all examples of major cloud storage providers with STaaS subscription options.

STaaS lets you treat storage as OpEx. You sign a service level agreement (SLA) with your STaaS provider and pay for storage and data transfer rates (e.g., cost per gigabyte). Best of all, this whole process is automated, allowing you to scale your storage needs up and down as demand requires while maintaining performance and availability 24/7.

3. Benefits of Storage as a Service

To summarize, the benefits of STaaS include:

● OpEx subscription model that lets you optimize your storage costs ● Ability to quickly scale and provision storage resources to your apps as you grow

● Always-on reliability of major cloud service providers

● Simplified storage management environment

Referrence:

https://www.purestorage.com/knowledge/what-is-storage-as-a-service.html