SVKM'S NMIMS Nilkamal School of Mathematics, Applied Statistics & Analytics
Master of Science (Data Science)

Practical-4 Storage as a service using AWS.

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Writeup:-

- ## STORAGE AS A SERVICE-S3

Storage as a Service (STaaS) refers to cloud-based storage solutions rented from a Cloud Service Provider (CSP) that offer convenient access to storage resources. It caters to a broad spectrum of users, including enterprises, small and medium businesses, home offices, and individuals, enabling them to leverage the cloud for multimedia storage, data repositories, backup and recovery, as well as disaster recovery. Additionally, there are advanced managed services built upon STaaS, such as Database as a Service, allowing users to store data in tables hosted by CSP resources.

The primary **advantage is:**
- STaaS lies in its ability to offload the cost and complexity of managing data storage infrastructure and technology to a third-party CSP. This simplifies scaling up storage resources without the need for investing in new hardware or incurring configuration expenses.
- Enables faster adaptation to evolving market conditions. With just a few clicks, users can rent terabytes or more of storage capacity without the hassle of deploying new storage appliances independently

- ## S3 USECASES

Use cases:
  1. **Build a data lake**

Run big data analytics, artificial intelligence (AI), machine learning (ML), and high performance computing (HPC) applications to unlock data insights.

  2. **Back up and restore critical data**
Meet Recovery Time Objectives (RTO), Recovery Point Objectives (RPO), and compliance requirements with S3's robust replication features.

  3. **Archive data at the lowest cost**
Move data archives to the Amazon S3 Glacier storage classes to lower costs, eliminate operational complexities, and gain new insights.

4. Run cloud-native applications

Build fast, powerful mobile and web-based cloud-native apps that scale automatically in a highly available configuration.

- **STEPS FOR S3**

To Configure S3 with following task:

Sign Up for Amazon S3

Create a Bucket

Add an Object to a Bucket

Add an folder to Bucket

View an Object

Move an Object

Delete an Object and Bucket

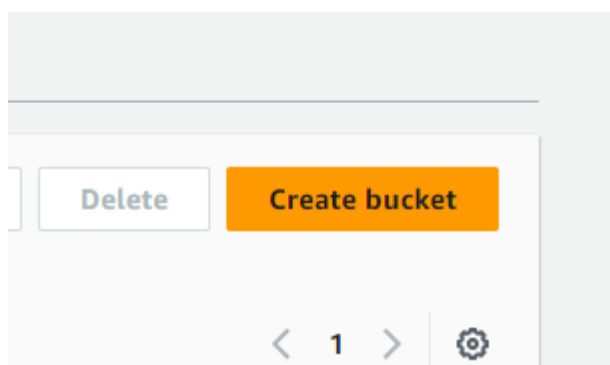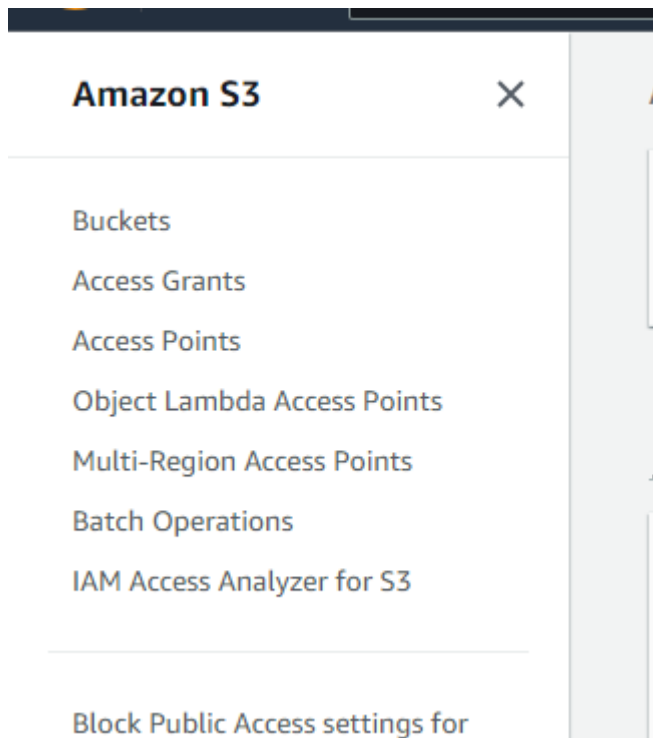To empty a bucket

To delete a bucket

Hosting a Static Website on Amazon S3

AWS user to control S3

Implement S3 for :

1. uploading a file,video,etc.

2. uploading a static wesite

PRAC 4: TO CONFIGURE AMAZON SIMPLE STORAGE SERVICE

Amazon S3   ✕

Buckets

Access Grants

Access Points

Object Lambda Access Points

Multi-Region Access Points

Batch Operations

IAM Access Analyzer for S3

Block Public Access settings for

Delete   **Create bucket**

‹   1   ›   ⚙

Create bucket Info

Buckets are containers for data stored in S3.

General configuration

AWS Region

US West (Oregon) us-west-2 ▼

Bucket type   Info

- ● **General purpose**
  Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.

- ○ **Directory - *New***
  Recommended for low-latency use cases. These buckets use only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.

Bucket name   Info

ccpracbucket

Bucket name must be unique within the global namespace and follow the bucket naming rules. See rules for bucket naming ↗

Copy settings from existing bucket - *optional*
Only the bucket settings in the following configuration are copied.

Choose bucket

Format: s3://bucket/prefix

General purpose buckets (4) Info

Buckets are containers for data stored in S3.

🔍 Find buckets by name

Name	▲
○ ccpracbucket	

Upload Info

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. Learn more 🗗

Drag and drop files and folders you want to upload here, or choose **Add files** or **Add folder**.

Files and folders (1 Total, 11.4 KB)

All files and folders in this table will be uploaded.

| Remove | Add files | Add folder |

| 🔍 Find by name | | | ‹ 1 › |

	Name ▽	Folder
☐	excel-to-json.json	-

Destination Info

Destination
s3://ccpracbucket

▶ **Destination details**
Bucket settings that impact new objects stored in the specified destination.

▶ **Permissions**

⊘ **Upload succeeded**
View details below.

Upload: status

ⓘ The information below will no longer be available after you navigate away from

Files and folders | Configuration

Files and folders (1 Total, 11.4 KB)

🔍 Find by name

Name	Folder	▽	Type	▽	Size	▽	Status	▽	Error
excel-to-jso...	-		application/...		11.4 KB		⊘ Succeeded		-

📋 Copy S3 URI   ⤓ Download   Open ⬀

```
{
  "Buildings": [
    {
      "Rank": 1,
      "Building": "Burj Khalifa",
      "City": "Dubai",
      "Country": "United Arab Emirates",
      "Metres": 828,
      "Floors": 163,
      "Built": 2010
    },
    {
      "Rank": 2,
      "Building": "Shanghai Tower",
      "City": "Shanghai",
      "Country": "China",
      "Metres": 632,
      "Floors": 128,
      "Built": 2015
    },
    {
      "Rank": 3,
      "Building": "Abraj Al-Bait Clock Tower",
      "City": "Mecca",
      "Country": "Saudi Arabia",
      "Metres": 601,
      "Floors": 120,
      "Built": 2012
    },
    {
      "Rank": 4,
      "Building": "Ping An Finance Centre",
      "City": "Shenzhen",
      "Country": "China",
      "Metres": 599
```

FOR THE STATIC WEBSITE PART

SELECT ANY SAMPLE HTML CODE FROM WEB

PASTE IT IN NOTEPAD, AND SAVE IT WITH .html extension

```
*Untitled - Notepad
File  Edit  Format  View  Help
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Sample HTML Page</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            margin: 0;
            padding: 0;
            background-color: #f0f0f0;
        }
        header {
            background-color: #333;
            color: #fff;
            padding: 10px;
            text-align: center;
        }
        nav {
            background-color: #444;
            color: #fff;
            padding: 10px;
            text-align: center;
        }
        nav ul {
            list-style-type: none;
            margin: 0;
            padding: 0;
        }
        nav ul li {
            display: inline;
            margin-right: 10px;
        }
    }
```

Upload Info

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. Learn more 🗗

Drag and drop files and folders you want to upload here, or choose **Add files** or **Add folder**.

Files and folders (1 Total, 1.7 KB)   [Remove] [Add files] [Add folder]

All files and folders in this table will be uploaded.

🔍 Find by name   ‹ 1 ›

☐	Name	▽	Folder
☐	web.html		-

Upload succeeded
View details below.

Upload: status

ⓘ The information below will no longer be available after you navigate away from this

Files and folders | **Configuration**

Files and folders (1 Total, 1.7 KB)

🔍 Find by name

Name	Folder ▽	Type ▽	Size ▽	Status ▽	Error
web.html	-	text/html	1.7 KB	⊘ Succeeded	-

web.html Info

[Copy S3 URI] [Download] [Open ⧉] [Object actions ▼]

Properties | **Permissions** | **Versions**

Object overview

Owner
shaikhsharmin857

AWS Region
US West (Oregon) us-west-2

Last modified
February 29, 2024, 08:36:00 (UTC+05:30)

Size
1.7 KB

Type
html

Key
▢ web.html

S3 URI
▢ s3://ccpracbucket/web.html

Amazon Resource Name (ARN)
▢ arn:aws:s3:::ccpracbucket/web.html

Entity tag (Etag)
▢ bffe49f23b3efc24aa5ba9f984398666

Object URL
▢ https://ccpracbucket.s3.us-west-2.amazonaws.com/web.html

Welcome to My Website

Home   About   Contact

Main Content Area

This is where the main content of your webpage would go.