Case 1: Design Services to upload and view 100 gb of data. Consider for data security and latency while designing.  
For this case I am using AWS cloud services.

1. **Setting Up an S3 Bucket** :::   
   Creating a new S3 bucket, let’s name it as “ shiv-s3”  
   Choose region close to our user to reduce latency.  
   Bucket versioning is enabled to give us freedom to have older and newer versions.  
   Now set up bucket policies to restrict access ::   
    eg:   
    {

"Version": "2024-7-11",

"Statement": [

{

"Sid": "PublicReadGetObject",

"Effect": "Allow",

"Principal": "\*",

"Action": "s3:GetObject",

"Resource": "arn:aws:s3:::shiv-s3 /\*"

}

]

}

\*\*\* we can use policies according to our respective needs

After this setting up encryption either AES-256 or AWS-KMS

1. Now **to upload data in the s3** bucket we can use different methods, I am doing it directly using AWS-CLI  
   to upload the data I am using command   
     
    “aws s3 cp file\_path s3://shiv-s3/ --recursive”

**Enabling Transfer Acceleration** in s3 bucket properties to speed up upload

We can use accelerated endpoint for upload using command  
  
“aws s3 cp file\_path s3://shiv-s3/ --endpoint-url https://shiv-s3.s3-accelerate.amazonaws.com”  
  
3. Now setting up **Amazon CloudFront** for low latency and access data  
 setting origin to s3 bucket, and data will be available at CloudFront URL

4.For Data security **creating IAM policies and Roles**   
 eg for read only access firstly create IAM creating IAM roles and attaching policy   
  
 “{

"Version": "2024-7-11",

"Statement": [

{

"Effect": "Allow",

"Action": "s3:GetObject",

"Resource": "arn:aws:s3:::shiv-s3/\*"

}

]

}”

Now enabling logging and monitoring

For s3 bucket enabling server access logging and specifying a bucket to store the logs

And that setting Cloud Watch to monitor S3 bucket and setting alarms for respective needs

Through this we can monitor the performance

5. To view the data we can use S3 as static website hosting and create a index.html file to see all the data  
 The data will be available at   
 “<http://shiv-s3.s3-website-Region.amazonaws.com>”

Here Region is not specified when we create the bucket and allow static website hosting you will get the desired URL

Here is a sample index.html file to see the data

“<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Welcome to My Static Website</title>

<style>

body {

font-family: Arial, sans-serif;

background-color: #f4f4f4;

margin: 0;

padding: 0;

}

header {

background-color: #333;

color: #fff;

padding: 10px 0;

text-align: center;

}

main {

padding: 20px;

text-align: center;

}

footer {

background-color: #333;

color: #fff;

padding: 10px 0;

text-align: center;

position: fixed;

width: 100%;

bottom: 0;

}

</style>

</head>

<body>

<header>

<h1>Welcome to My Static Website</h1>

</header>

<main>

<p>This is a simple static website hosted on Amazon S3.</p>

<p>You can use this space to provide information about your services, products, or anything else you'd like to share.</p>

</main>

<footer>

<p>&copy; 2024 My Static Website</p>

</footer>

</body>

</html>”

AWS CLI

End user

Static Website Hosting

CloudFront Distribution

AWS S3 Bucket

AWS Transfer acceleration