

CSC PROJECT

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SECTION : 35

Architectural Overview:



OVERVIEW OF THE SERVICES :-

AWS S3 :-

Amazon S3 (Simple Storage Service) is a scalable object storage service offered by Amazon Web Services. It allows users to store and retrieve any amount of data at any time from anywhere on the web. S3 is highly durable, secure, and cost-effective, making it ideal for a wide range of use cases.

including data backup, content distribution, and application hosting.

AWS LAMBDA :-

AWS Lambda is a serverless compute service provided by Amazon Web Services. It enables developers to run code without provisioning or managing servers, paying only for the compute time consumed. Lambda supports multiple programming languages and automatically scales to handle incoming traffic.

AWS CLOUD WATCH :-

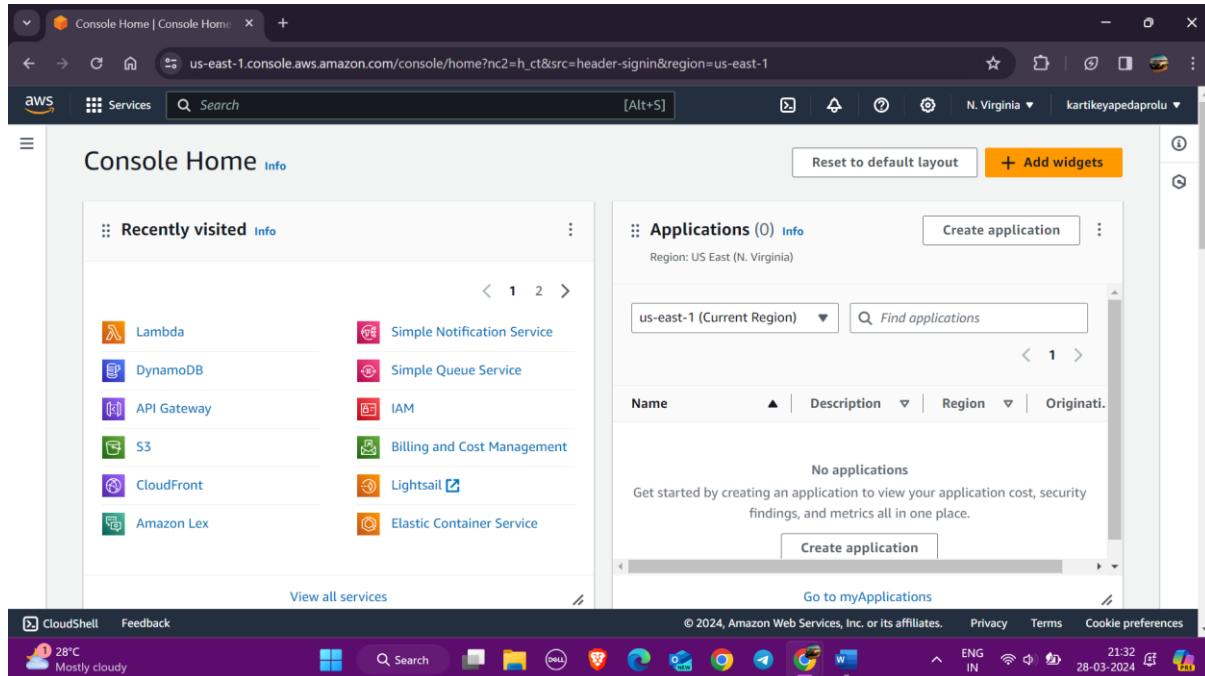
AWS CloudWatch is a monitoring and observability service by Amazon Web Services. It allows users to collect and track metrics, log files, and set alarms, enabling them to monitor their AWS resources, applications, and services in real-time. CloudWatch helps in gaining insights into system performance, resource utilization, and operational health.

AWS TRANSCRIBE :-

AWS Transcribe is a service by Amazon Web Services for converting speech to text. It supports a variety of audio formats and languages, providing accurate transcriptions through automatic speech recognition technology. Transcribe is commonly used for tasks like transcribing customer service calls, generating subtitles for videos, and extracting insights from recorded meetings or lectures.

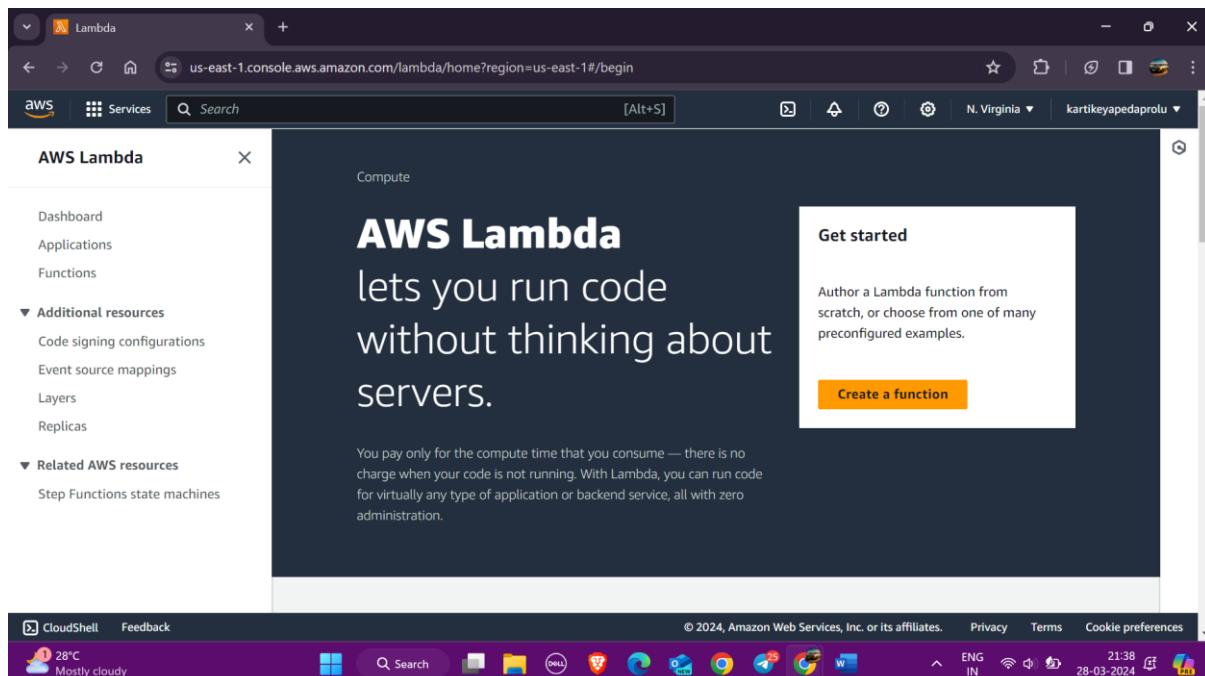
Step 1 :-

First open AWS management console



STEP 2 :-

Secondly , click on AWS LAMBDA and create function



Create function Info

Choose one of the following options to create your function.

- Author from scratch**
Start with a simple Hello World example.
- Use a blueprint**
Build a Lambda application from sample code and configuration presets for common use cases.
- Container image**
Select a container image to deploy for your function.

Basic information

Function name
Enter a name that describes the purpose of your function.

Use only letters, numbers, hyphens, or underscores with no spaces.

Runtime Info
Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby.

Architecture Info
Choose the instruction set architecture you want for your function code.
 x86_64
 arm64

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Create function Info

Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby.

Architecture Info
Choose the instruction set architecture you want for your function code.
 x86_64
 arm64

Permissions Info
By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

Advanced settings

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The screenshot shows the AWS Lambda console with a green success message at the top: "Successfully created the function myaudio1. You can now change its code and configuration. To invoke your function with a test event, choose 'Test'." The main area displays the "Function overview" for "myaudio1". It includes a "Diagram" tab showing a single box labeled "myaudio1" with a "Layers" box below it, and a "Template" tab. Below the diagram are buttons for "+ Add trigger" and "+ Add destination". On the right side, there is a "Description" section with a link to "Edit description", a "Last modified" timestamp of "4 seconds ago", and a "Function ARN" field containing "arn:aws:lambda:us-east-1:766514882740:function:myaudio1". The left sidebar lists "myaudio1" under "Functions" and provides links for "Additional resources" and "Related AWS resources". The bottom navigation bar includes "CloudShell", "Feedback", and various system icons.

STEP 3 :-

Click on S3 and create an S3 bucket

The screenshot shows the AWS Lambda console with a search bar at the top containing "S3". The search results for "S3" are displayed in a "Services" section. The first result is "S3" with a subtitle "Scalable Storage in the Cloud". Below it are "Top features" including "Buckets", "Access points", "Storage Lens dashboards", and "Batch Operations". Other services listed include "S3 Glacier", "AWS Snow Family", and "Storage Gateway". The left sidebar shows the same navigation as the previous screenshot, including "myaudio1" under "Functions". The bottom navigation bar includes "CloudShell", "Feedback", and various system icons.

Create S3 bucket | S3 | Global

s3.console.aws.amazon.com/s3/bucket/create?region=us-east-1

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 this account

Storage Lens

- Dashboards
- Storage Lens groups
- AWS Organizations settings

CloudShell Feedback Language

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Create bucket

Buckets are containers for data stored in S3.

General configuration

AWS Region: US East (N. Virginia) us-east-1

Bucket type: General purpose

Bucket name: myawsbucket

Copy settings from existing bucket - optional

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This screenshot shows the 'Create bucket' page in the AWS S3 console. The 'General configuration' section is visible, with the 'AWS Region' set to 'US East (N. Virginia) us-east-1'. The 'Bucket type' dropdown is open, showing 'General purpose' (selected) and 'Directory - New'. The 'Bucket name' field contains 'myawsbucket'. The page also includes a link to 'Copy settings from existing bucket - optional'.

Create S3 bucket | S3 | Global

s3.console.aws.amazon.com/s3/bucket/create?region=us-east-1&bucketType=general

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 this account

Storage Lens

- Dashboards
- Storage Lens groups
- AWS Organizations settings

CloudShell Feedback Language

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Block Public Access settings for this bucket

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)

Block all public access

Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.

- Block public access to buckets and objects granted through new access control lists (ACLs)**
S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.
- Block public access to buckets and objects granted through any access control lists (ACLs)**
S3 will ignore all ACLs that grant public access to buckets and objects.
- Block public access to buckets and objects granted through new public bucket or access point policies**
S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.
- Block public and cross-account access to buckets and objects through any public bucket or access point policies**
S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

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This screenshot shows the 'Block Public Access settings for this bucket' section of the AWS S3 Create Bucket page. It includes a detailed description of how public access is granted and how to block it. The 'Block all public access' checkbox is checked. Below it, four sub-options are listed, each with a description of what it does to public access permissions.

S3 buckets | S3 | Global

s3.console.aws.amazon.com/s3/buckets?region=us-east-1&bucketType=general

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 this account

Storage Lens

Dashboards

Storage Lens groups

AWS Organizations settings

CloudShell Feedback Language

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Q Search

View details

Successfully created bucket "quickaudiotext"
To upload files and folders, or to configure additional bucket settings, choose View details.

Amazon S3 > Buckets

Account snapshot

View Storage Lens dashboard

General purpose buckets Directory buckets

General purpose buckets (1) Info

Buckets are containers for data stored in S3.

Name AWS Region Access Creation date

quickaudiotext US East (N. Virginia) us-east-1 Bucket and objects not March 28, 2024, 21:42:39

Find buckets by name

Copy ARN Empty Delete Create bucket

< 1 > ⌂

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ENG IN 21:42 28-03-2024

Upload objects - S3 bucket quickaudiotext

s3.console.aws.amazon.com/s3/upload/quickaudiotext?region=us-east-1&bucketType=general

Upload succeeded

View details below.

Upload: status

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

Summary

Destination	Succeeded	Failed
s3://quickaudiotext	1 file, 9.7 MB (100.00%)	0 files, 0 B (0%)

Files and folders Configuration

Files and folders (1 Total 0.7 MB)

CloudShell Feedback Language

Q Search

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ENG IN 21:46 28-03-2024

The screenshot shows the AWS Lambda console with the function 'myaudio1' selected. The left sidebar includes links for Dashboard, Applications, Functions, and 'myaudio1'. The main area displays the 'Function overview' with a 'Diagram' tab selected, showing a single function icon labeled 'myaudio1' and a 'Layers' section with '(0)'. Buttons for '+ Add trigger' and '+ Add destination' are present. To the right, there are sections for Description, Last modified (6 minutes ago), Function ARN (arn:aws:lambda:us-east-1:766514882740:function:myaudio1), and Function URL. The bottom navigation bar includes tabs for Code, Test, Monitor, Configuration, Aliases, and Versions.

4. Upload the mp3 file in the S3 bucket you wanted to upload it

The screenshot shows the AWS S3 console with the bucket 'quickaudiotext' selected. The left sidebar includes links for Buckets, Storage Lens, and CloudShell. The main area displays the 'Objects' tab with a list of one item: '[iSongs.info] 03 - Madhuramu.mp3'. The object was last modified on March 28, 2024, at 21:46:02, has a size of 9.7 MB, and is stored in the Standard storage class. The bottom navigation bar includes tabs for Objects, Properties, Permissions, Metrics, Management, and Access Points.

Amazon S3

quickaudiotext

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 this account

Storage Lens

Dashboards

Storage Lens groups

AWS Organizations settings

CloudShell Feedback Language

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Search

Properties

Permissions

Metrics

Management

Access Points

Bucket overview

AWS Region: US East (N. Virginia) us-east-1

Amazon Resource Name (ARN): arn:aws:s3:::quickaudiotext

Creation date: March 28, 2024, 21:42:39 (UTC+05:30)

Bucket Versioning

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

Bucket Versioning: Disabled

Configure in CloudTrail

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ENG IN 21:49 28-03-2024

5. Click on create event notification and integrate with the lambda service

Amazon S3

quickaudiotext

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 this account

Storage Lens

Dashboards

Storage Lens groups

AWS Organizations settings

CloudShell Feedback Language

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Search

Configure in CloudTrail

No event notifications

Choose [Create event notification](#) to be notified when a specific event occurs.

Create event notification

Amazon EventBridge

For additional capabilities, use Amazon EventBridge to build event-driven applications at scale using S3 event notifications. [Learn more](#) or see [EventBridge pricing](#)

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ENG IN 21:49 28-03-2024

Create event notification - S3 b x +

s3.console.aws.amazon.com/s3/bucket/quiccaudiotext/property/notification/create?region=us-east-1&bucketType=general

Amazon S3 Services Search [Alt+S]

Amazon S3 > Buckets > quickaudiotext > Create event notification

Create event notification [Info](#)

To enable notifications, you must first add a notification configuration that identifies the events you want Amazon S3 to publish and the destinations where you want Amazon S3 to send the notifications.

General configuration

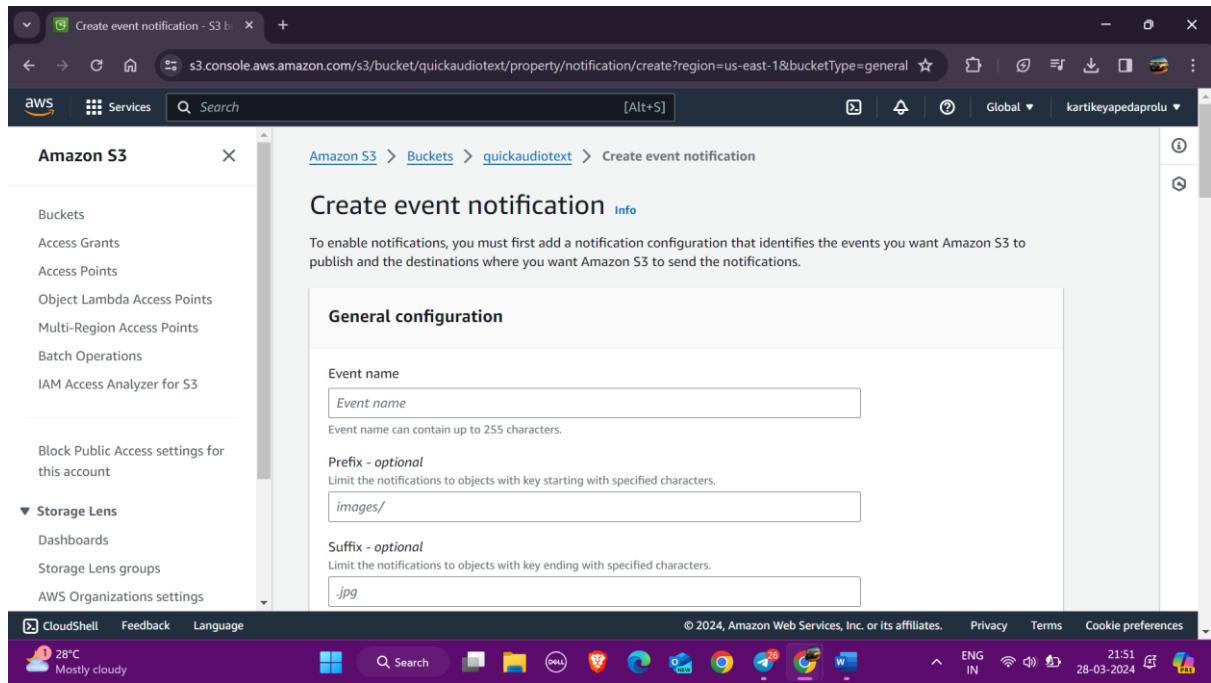
Event name Event name can contain up to 255 characters.

Prefix - optional Limit the notifications to objects with key starting with specified characters.

Suffix - optional Limit the notifications to objects with key ending with specified characters.

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Create event notification - S3 b x +

s3.console.aws.amazon.com/s3/bucket/quiccaudiotext/property/notification/create?region=us-east-1&bucketType=general

Amazon S3 Services Search [Alt+S]

necessary permissions to call the relevant API to publish messages to an SNS topic, an SQS queue, or a Lambda function. [Learn more](#)

Destination
Choose a destination to publish the event. [Learn more](#)

Lambda function
Run a Lambda function script based on S3 events.

SNS topic
Fanout messages to systems for parallel processing or directly to people.

SQS queue
Send notifications to an SQS queue to be read by a server.

Specify Lambda function

Choose from your Lambda functions

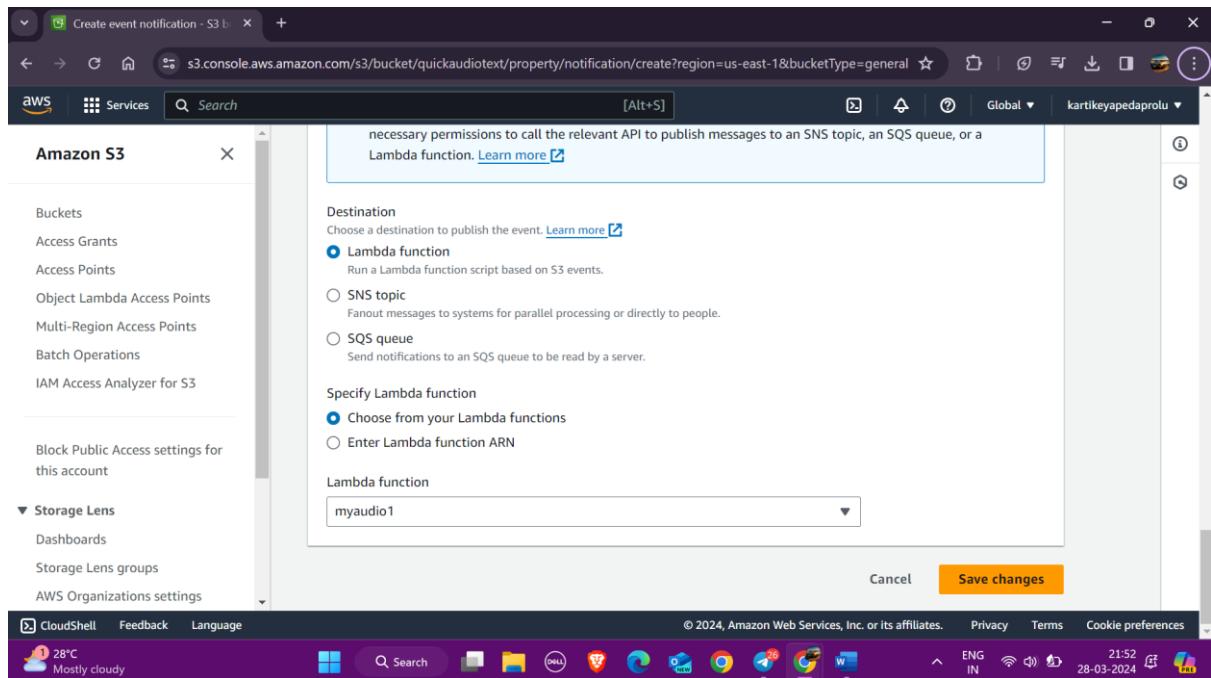
Enter Lambda function ARN

Lambda function myaudio1

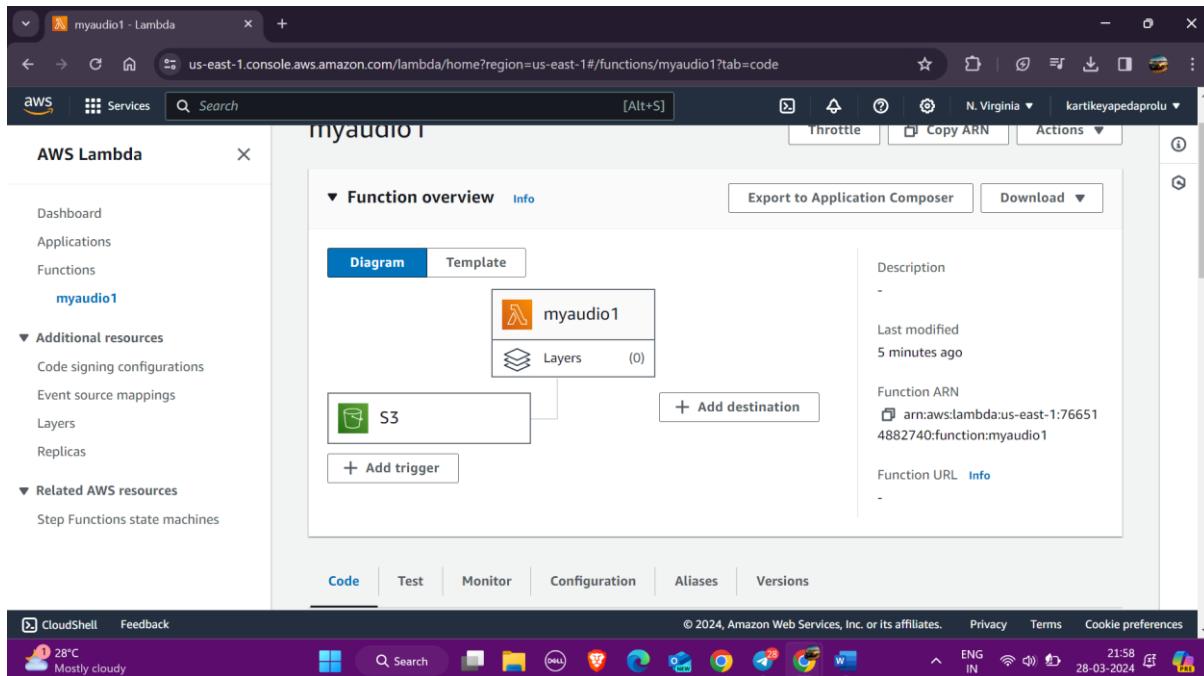
Cancel **Save changes**

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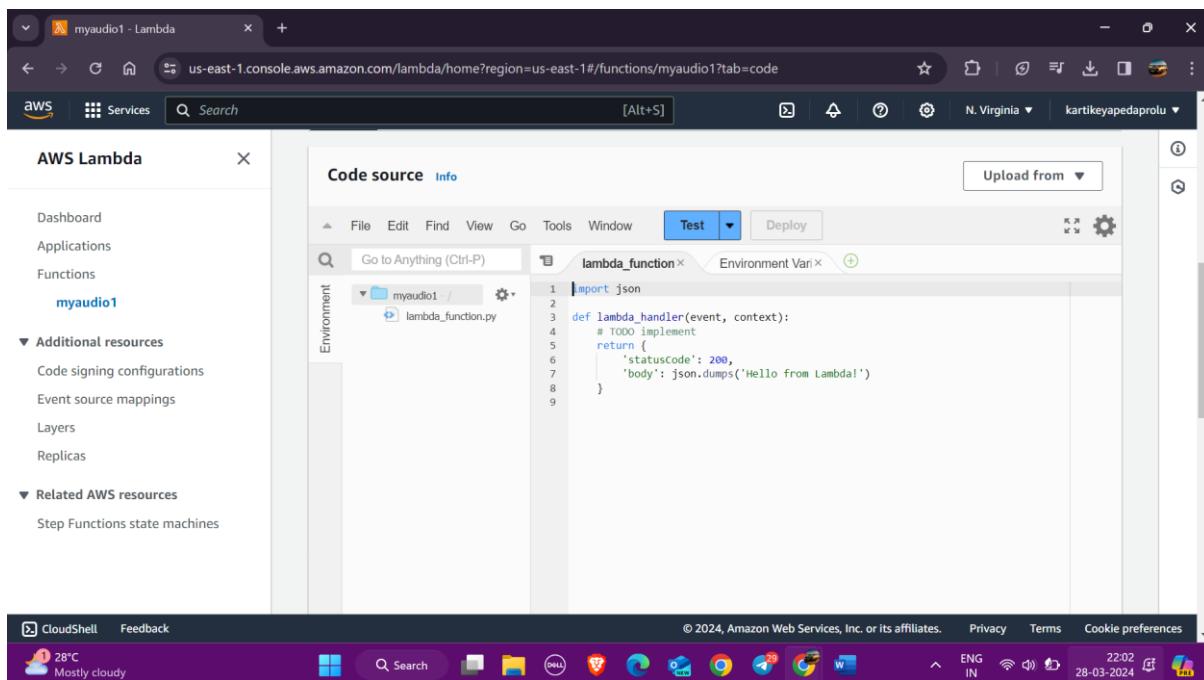
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6. Now you can see the s3 bucket in the lambda service



The screenshot shows the AWS Lambda console. On the left, the navigation bar includes 'Dashboard', 'Applications', 'Functions' (with 'myaudio1' selected), 'Additional resources', and 'Related AWS resources'. The main area displays the 'Function overview' for 'myaudio1'. It features a 'Diagram' tab showing a connection from an 'S3' icon to the function box. A 'Layers' section indicates '(0)'. On the right, there's a 'Description' field, 'Last modified' (5 minutes ago), 'Function ARN' (arn:aws:lambda:us-east-1:76651:4882740:function:myaudio1), and a 'Function URL' link. Below the diagram are tabs for 'Code', 'Test', 'Monitor', 'Configuration', 'Aliases', and 'Versions'. The bottom of the screen shows a Windows taskbar with various icons and a weather widget.



The screenshot shows the AWS Lambda console with the 'Code source' editor open for the 'myaudio1' function. The left sidebar shows the same navigation as the previous screenshot. The main area has a 'File' menu with options like 'Edit', 'Find', 'View', 'Go', 'Tools', 'Window', and tabs for 'Test' (selected) and 'Deploy'. The code editor shows a file named 'lambda_function.py' with the following content:

```
1 import json
2
3 def lambda_handler(event, context):
4     # TODO implement
5     return {
6         'statusCode': 200,
7         'body': json.dumps('Hello from Lambda!')
8     }
```

The bottom of the screen shows a Windows taskbar with various icons and a weather widget.

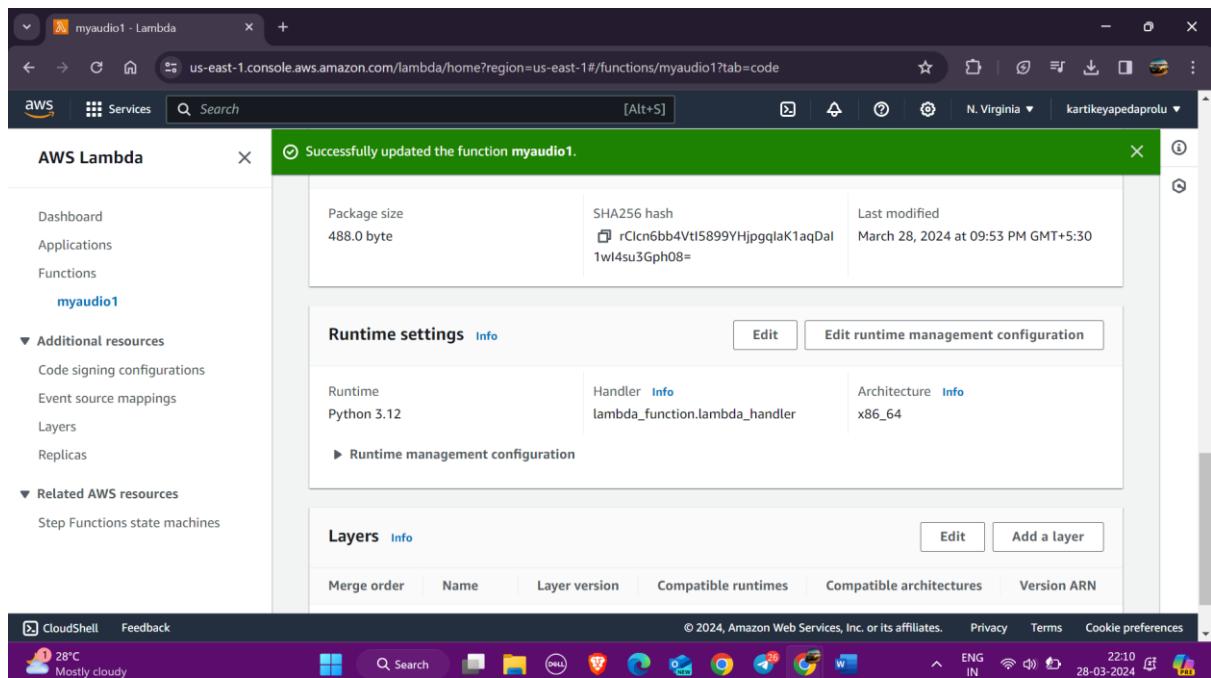
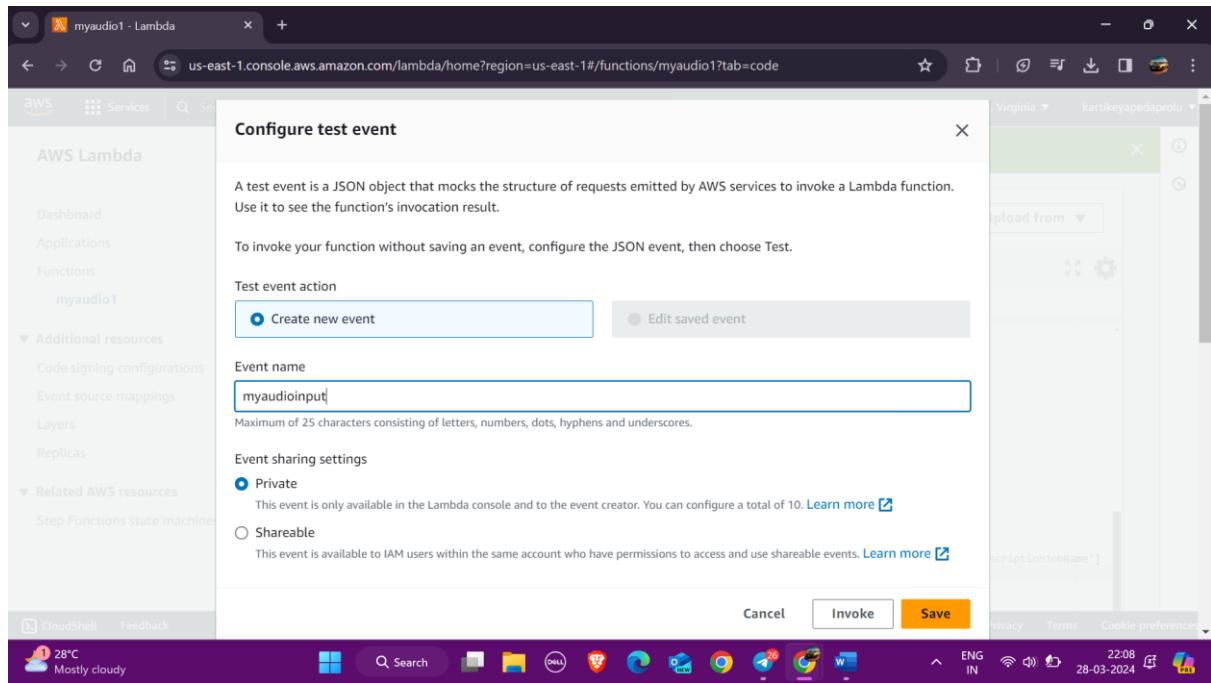
The screenshot shows the AWS Lambda console interface. On the left, the navigation pane is open with 'myaudio1' selected under 'Functions'. The main area is titled 'Code source' and contains the following Python code:

```
response = client.start_transcription_job(
    TranscriptionJobName=jobName,
    LanguageCode='en-US',
    MediaFormat='mp4',
    Media={
        'MediaFileUri': s3Path
    }
)
print(json.dumps(response, default=str))

return [
    'TranscriptionJobName': response['TranscriptionJob']['TranscriptionJobName']
]
```

7. Now you can see the Code in “Python 3.12” as the code and click on configure test

The screenshot shows the AWS Lambda console interface. A green success message at the top states 'Successfully updated the function myaudio1.' The code editor window is identical to the previous one, displaying the same Python function code.



Search tabs bda | us-east-1

us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/myaudio1/edit/runtime-settings?tab=code

AWS Services Search [Alt+S] N. Virginia kartikeyapedaprolu

Lambda Functions myaudio1 Edit runtime settings

Edit runtime settings

Runtime settings Info

Runtime
Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby.
 Python 3.12

Handler Info
 lambda_function.lambda_handler

Architecture Info
Choose the instruction set architecture you want for your function code.
 x86_64 arm64

Cancel Save

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quickaudiotext - S3 bucket

s3.console.aws.amazon.com/s3/buckets/quickaudiotext?region=us-east-1&bucketType=general&tab=objects

Amazon S3

Buckets
Access Grants
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Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3

Block Public Access settings for this account

Storage Lens
Dashboards
Storage Lens groups
AWS Organizations settings

Objects (1) Info

Copy S3 URI Copy URL Download Open Delete Actions

Create folder Upload

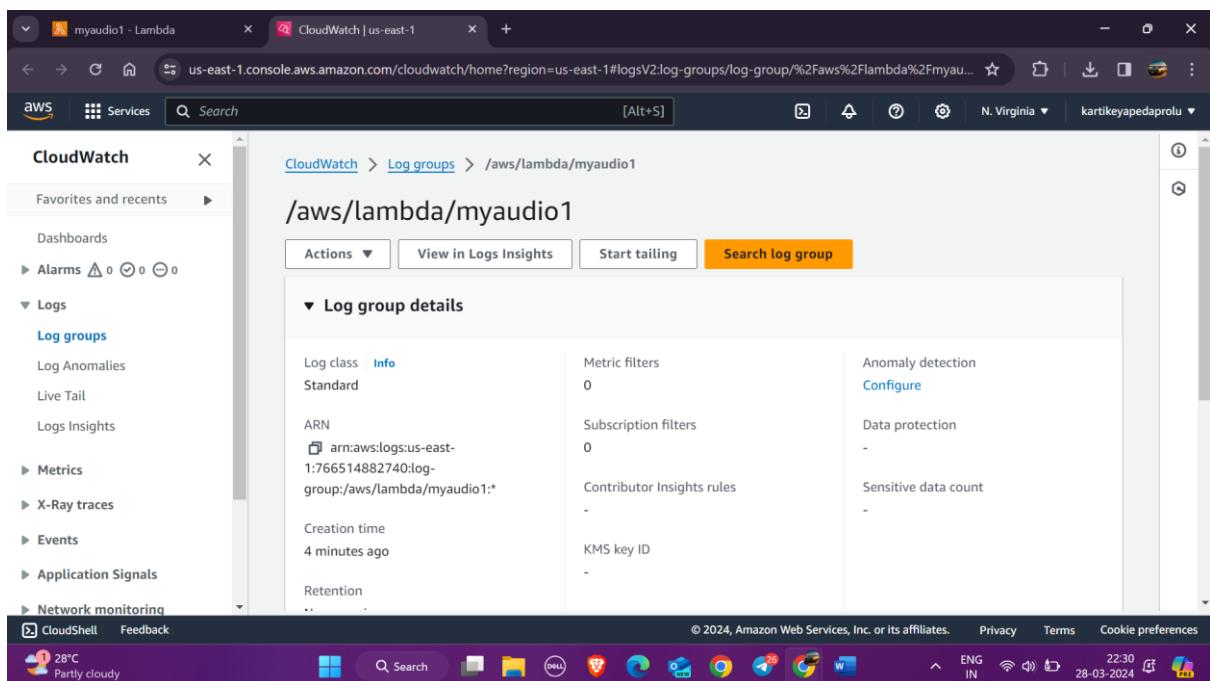
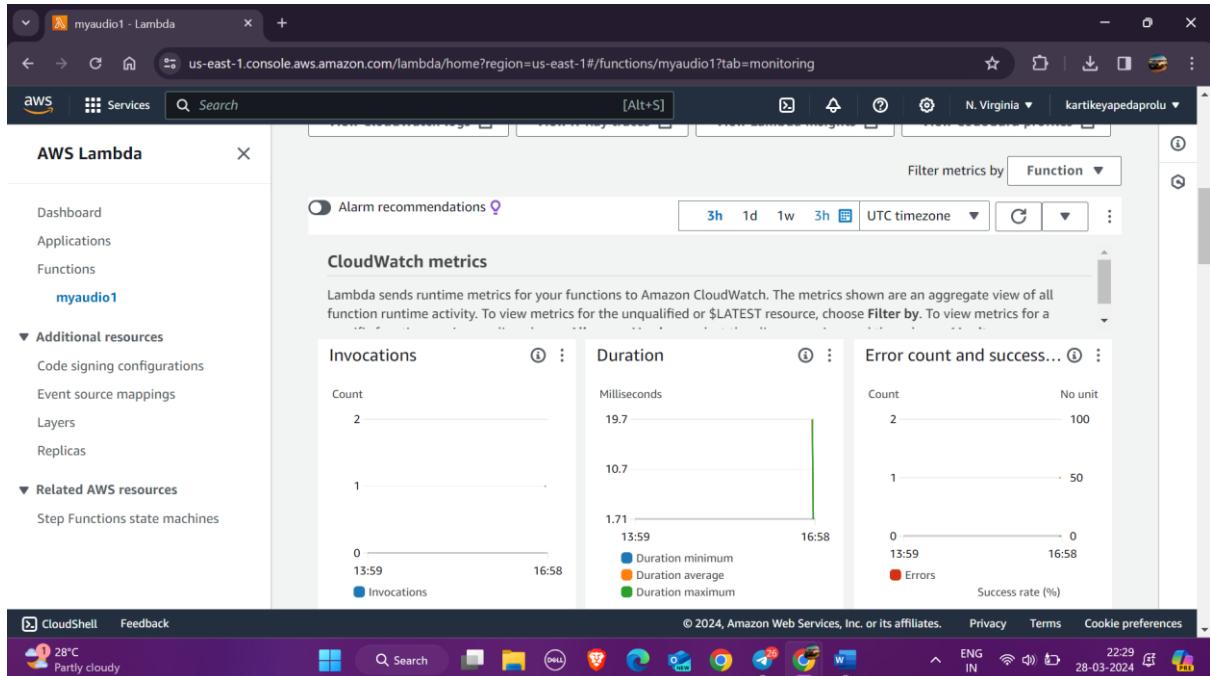
Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Name	Type	Last modified	Size	Storage class
[iSongs.info]	mp3	March 28, 2024, 21:46:02 (UTC+05:30)	9.7 MB	Standard
03 - Madhuramu Kadha.mp3				

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8. Here the Cloud Watch logs to confirm that the lambda function was triggered and started a transcription job in the AWS Transcribe



The screenshot shows the AWS CloudWatch Logs console. On the left, a sidebar lists various monitoring options like Dashboards, Alarms, Logs, Metrics, X-Ray traces, Events, Application Signals, and Network monitoring. The main area displays a log group named 'myaudio1 - Lambda'. It shows creation time (4 minutes ago), KMS key ID, retention (Never expire), and stored bytes. Below this, a table lists 'Log streams (1)'. The first row shows a log stream entry for March 28, 2024, at 22:25:51 UTC+05:30.

Log stream	Last event time
2024/03/28/[\$LATEST]0eb2a3beb3b7476781bff1fb340...	2024-03-28 22:25:51 (UTC+05:30)

The screenshot shows the AWS Lambda function configuration page for 'myaudio1'. The left sidebar includes links for Dashboard, Applications, Functions, and Additional resources like Code signing configurations and Event source mappings. The main panel displays the function code 'lambda_function.py' and its execution environment. It shows a 'Test Event Name' (unsaved) test event, a 'Response' object containing an error message about importing the 'boto' module, and 'Function Logs' which show a detailed traceback of the runtime import error. A 'Request ID' field contains the identifier 'fc1f192d-f063-46c9-99cd-2bce247bc239'.