

Experiment : 7

Title : Creating a lambda function in AWS to email daily reports

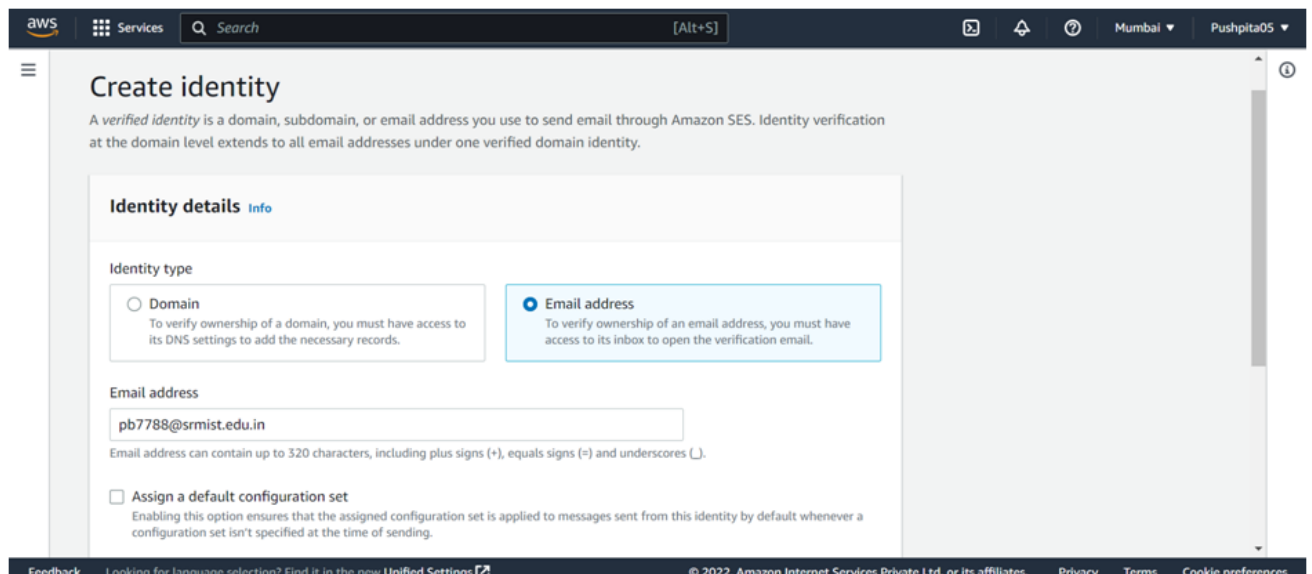
Aim : Automate Sending Emails at a Specific Time with AWS Lambda, CloudWatch and SES

Pre-requisites : AWS Console, Amazon SES, Amazon Lambda, Amazon CloudWatch.

Procedure : We are going to automate sending email to a person or a group of people. AWS **Cloudwatch** is used to setup a schedule to trigger AWS **Lambda** function and then it's going to use AWS **SES (Simple Email Service)** to send out emails to people.

Steps:

1. Go to AWS SES (Simple email service), click on "Create Identity". Use email address as a type and type the email address.



Create identity

A verified identity is a domain, subdomain, or email address you use to send email through Amazon SES. Identity verification at the domain level extends to all email addresses under one verified domain identity.

Identity details [Info](#)

Identity type

☐ Domain
To verify ownership of a domain, you must have access to its DNS settings to add the necessary records.

☒ Email address
To verify ownership of an email address, you must have access to its inbox to open the verification email.

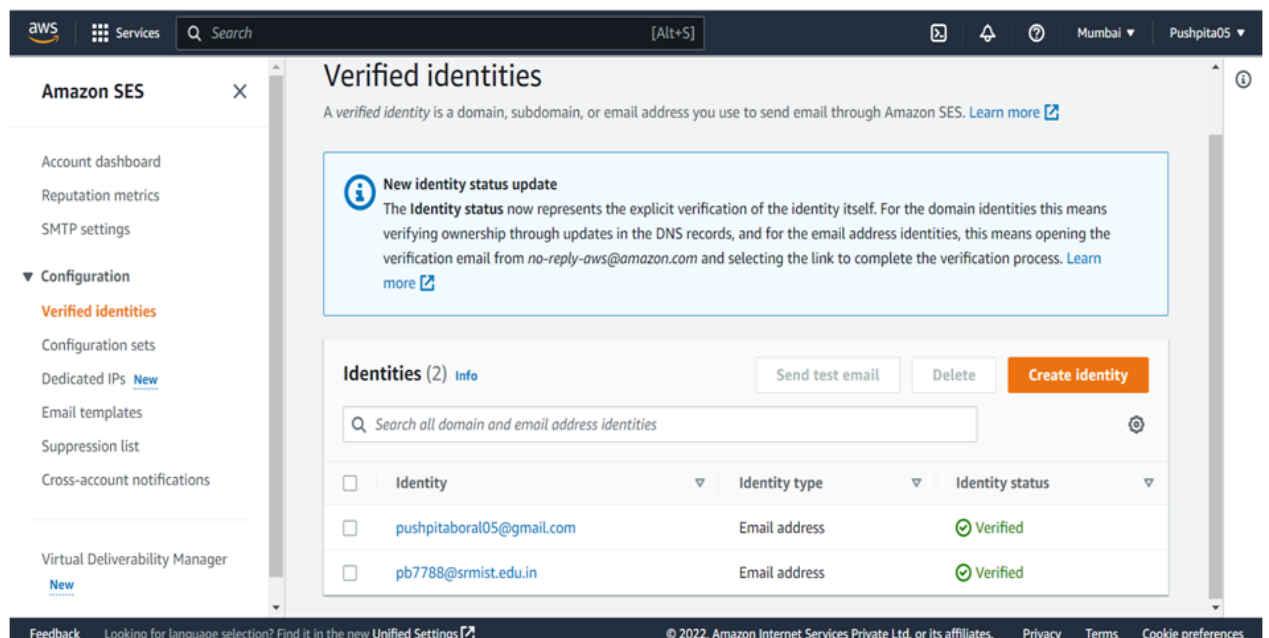
Email address

pb7788@srmist.edu.in

Email address can contain up to 320 characters, including plus signs (+), equals signs (=) and underscores (_).

☐ Assign a default configuration set
Enabling this option ensures that the assigned configuration set is applied to messages sent from this identity by default whenever a configuration set isn't specified at the time of sending.

2. Verify the email address that received an email from aws to tell you to verify that.



Amazon SES [X](#)

Account dashboard
Reputation metrics
SMTP settings
▼ Configuration
Verified identities
Configuration sets
Dedicated IPs [New](#)
Email templates
Suppression list
Cross-account notifications
Virtual Deliverability Manager
[New](#)

Verified identities

A verified identity is a domain, subdomain, or email address you use to send email through Amazon SES. [Learn more](#)

New identity status update
The Identity status now represents the explicit verification of the identity itself. For the domain identities this means verifying ownership through updates in the DNS records, and for the email address identities, this means opening the verification email from no-reply-aws@amazon.com and selecting the link to complete the verification process. [Learn more](#)

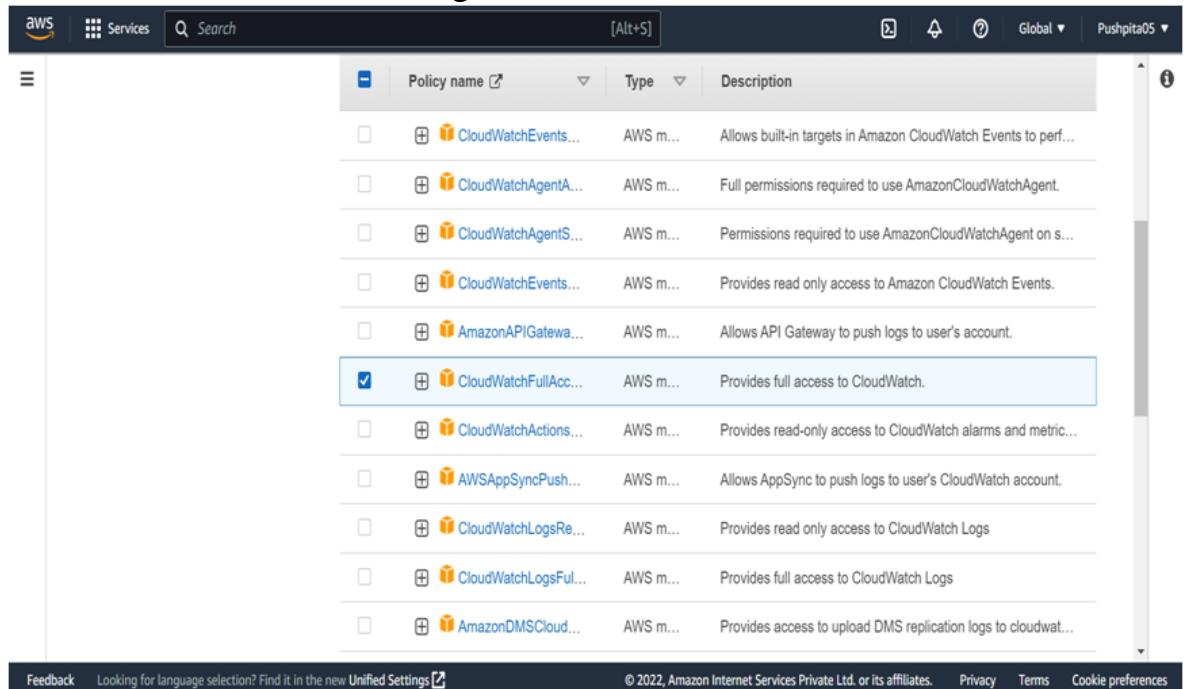
Identities (2) [Info](#)

[Send test email](#) [Delete](#) [Create identity](#)

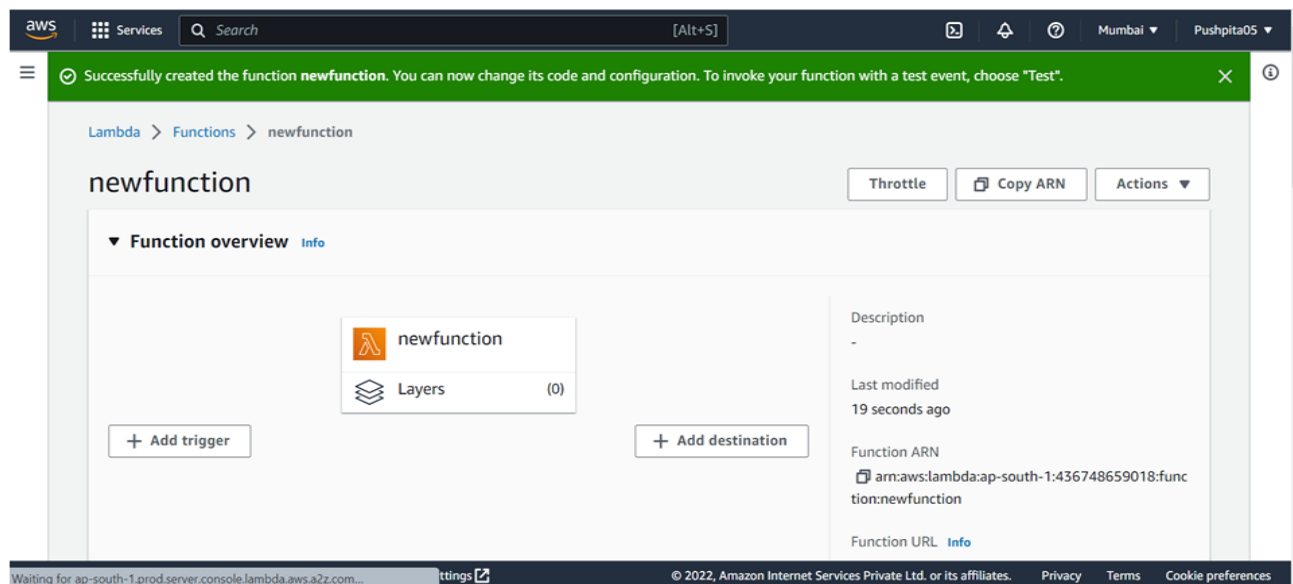
<input type="checkbox"/>	Identity	Identity type	Identity status
<input type="checkbox"/>	pushpitaboral05@gmail.com	Email address	Verified
<input type="checkbox"/>	pb7788@srmist.edu.in	Email address	Verified

3. Create two identities (email address).

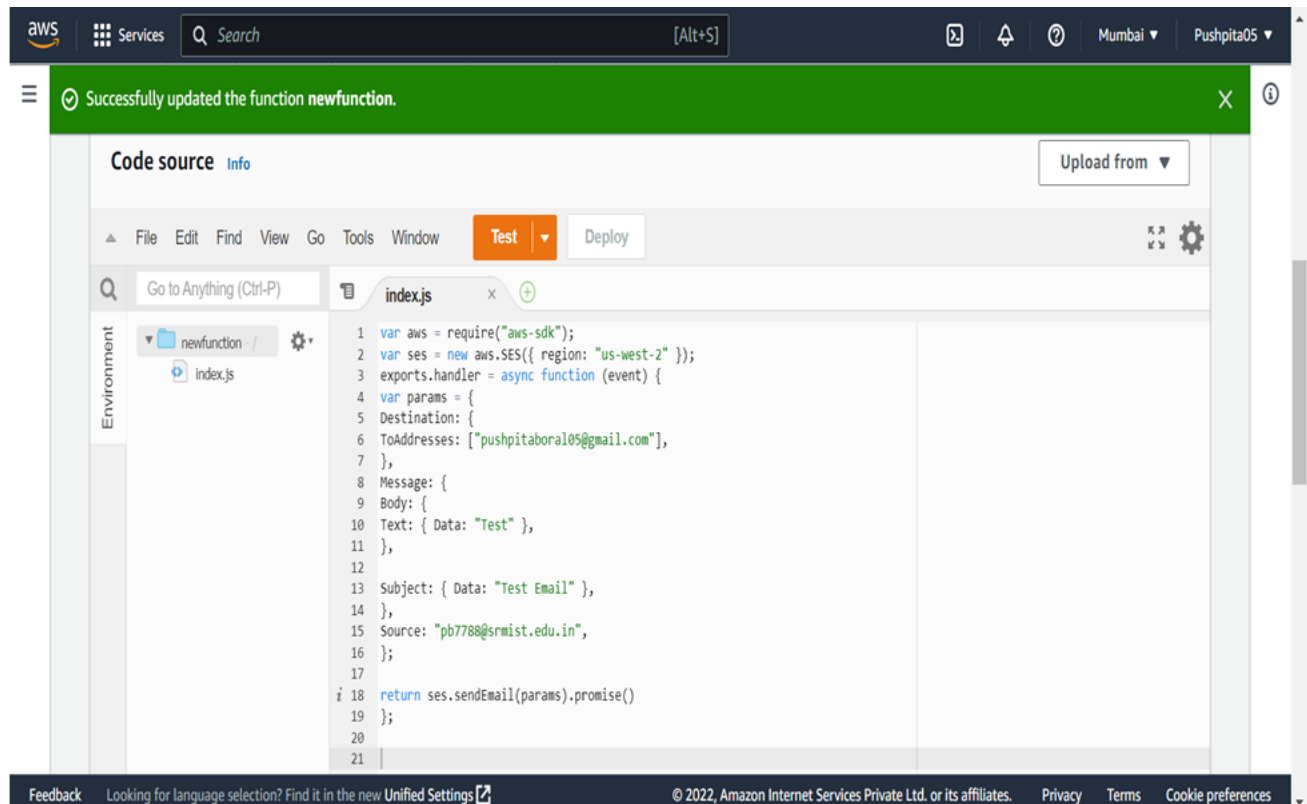
- One for sending emails and another for receiving.
4. Create an IAM role.
Give Use case as lambda and give full access to cloudwatch, SES.



5. Go to Lambda Service, create a lambda function.
Give name, runtime as NodeJS, execution role as created IAM role previously.



6. Use this template for the code:

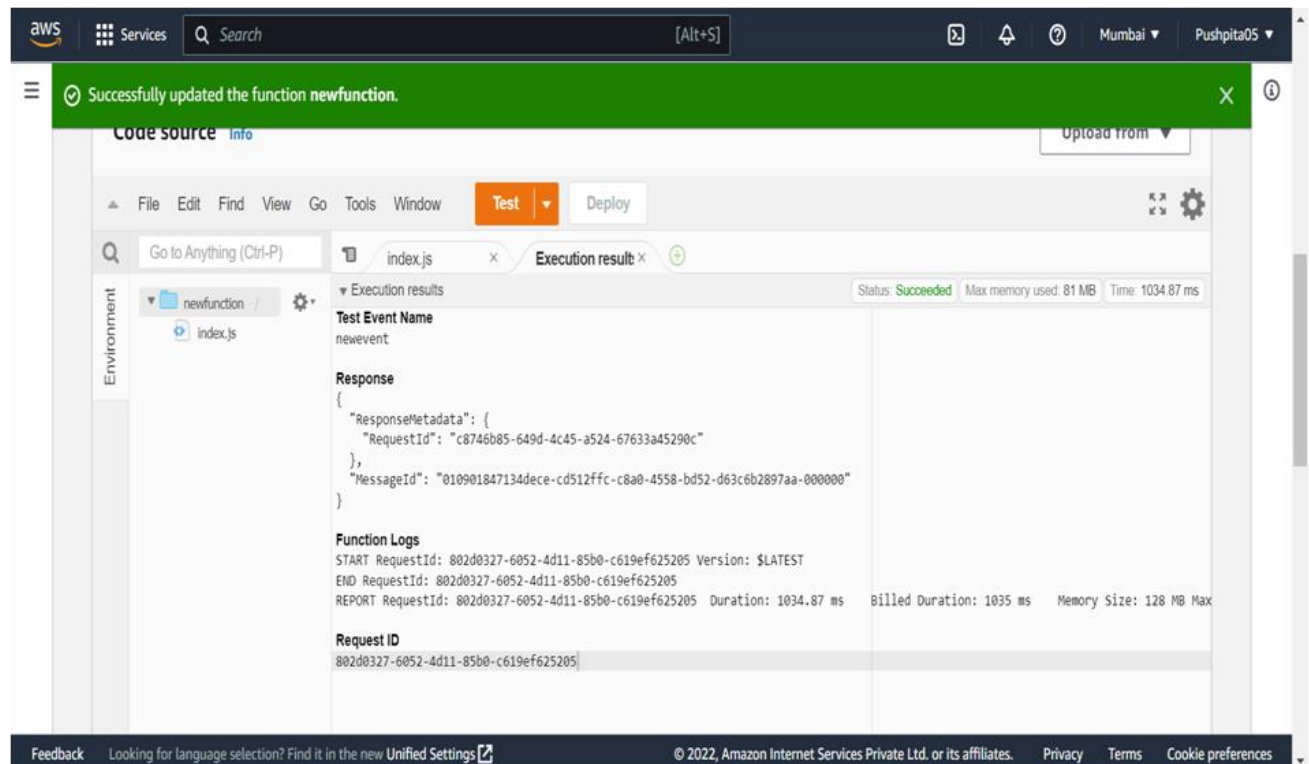


```
var aws = require("aws-sdk");
var ses = new aws.SES({ region: "us-west-2" });
exports.handler = async function (event) {
  var params = {
    Destination: {
      ToAddresses: ["RecipientEmailAddress"],
    },
    Message: {
      Body: {
        Text: { Data: "Test" },
      },

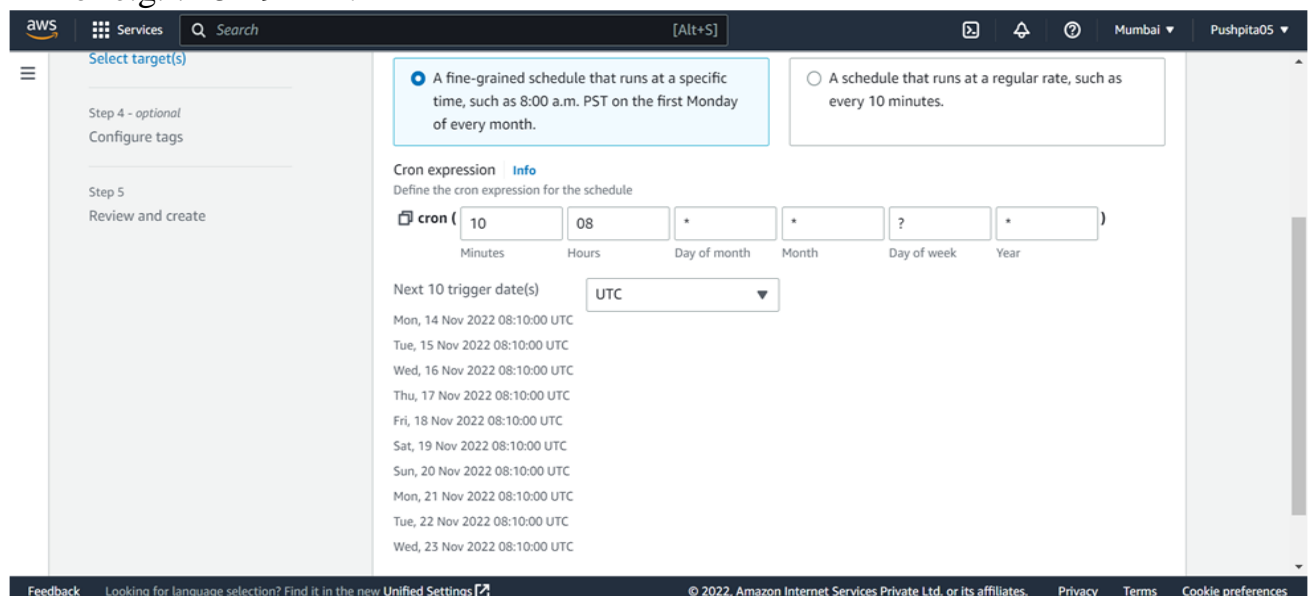
      Subject: { Data: "Test Email" },
    },
    Source: "SourceEmailAddress",
  };

  return ses.sendEmail(params).promise()
};
```

7. Click on Deploy and then TEST, you will receive the message in your mentioned emails.



8. For scheduled daily report, go to AWS Cloudwatch , navigate to rule section (now called as eventBridge).
9. Create rule- give name, ruletype- schedule, use cron expression for schedule pattern .
- For e.g. : 15 19 * * ? *



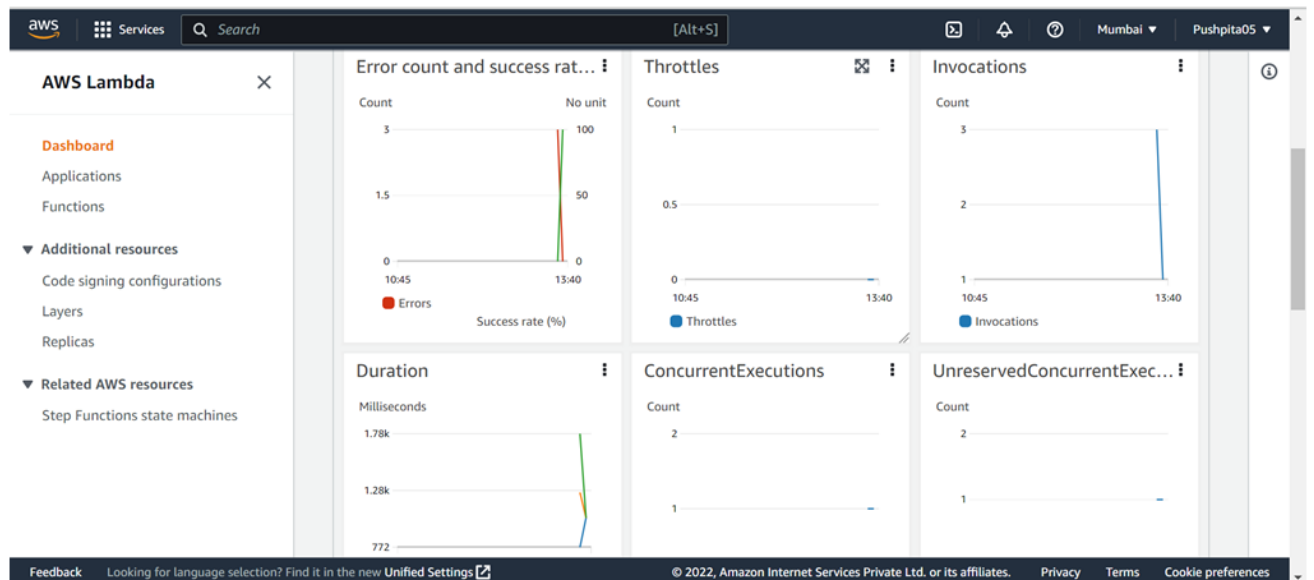
10. Select Targets as lambda function, and use the above defined function.

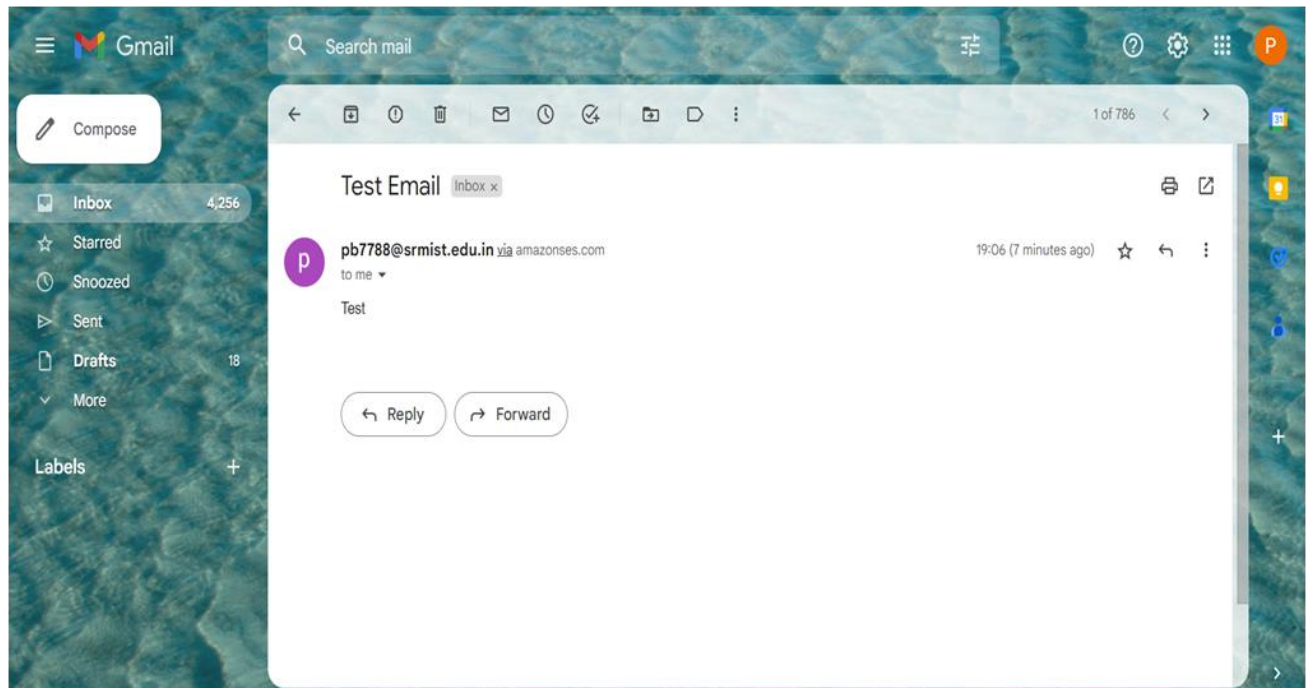
The screenshot shows the AWS EventBridge console interface. On the left, there's a sidebar with 'Configure tags' and 'Step 5 Review and create'. The main area is titled 'Add target' and contains the following sections:

- Target types:** Three radio buttons are present: 'EventBridge event bus', 'EventBridge API destination', and 'AWS service' (which is selected).
- Select a target:** A dropdown menu is set to 'Lambda function'.
- Function:** A dropdown menu is set to 'newfunction'.
- Buttons:** 'Add another target', 'Cancel', 'Previous', and 'Next' (highlighted in orange).

The footer of the console shows the AWS logo, 'Services' menu, search bar, and footer text: '© 2022, Amazon Internet Services Private Ltd. or its affiliates. Privacy Terms Cookie preferences'.

11. Go to monitoring in Lambda service, click on View logs in cloudWatch and check your mail inbox .





Result:

Hence, the lambda function is created and also implemented using SES, CloudWatch to schedule daily reports.