

Experiment: 7

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

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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 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 its 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.

AWS CloudShell

DCN Exp-1.docx - Google Drive

Inbox (892) - sk1262@srmist.edu.in

(19) WhatsApp

https://ap-south-1.console.aws.amazon.com/cloudshell/home?region=ap-south-1#a2327d4a-3737-4584-a8c9-4b1d05e52732

Services

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Amazon SES > Configuration: Verified identities > Create identity

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

dg8258@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.

AWS CloudShell

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Amazon SES

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](#)

Amazon SES > Configuration: Verified identities > dg8258@srmist.edu.in

sk1262@srmist.edu.in

Delete Send test email

Legacy TXT records

Domain verification in Amazon SES is now based on *DomainKeys Identified Mail (DKIM)*, an email authentication standard that receiving mail servers use to validate an email's authenticity. Configuring DKIM in your domain's DNS settings confirms to SES that you're the identity owner, eliminating the need for TXT records. Domain identities that were verified using TXT records do not need to be reverified; however, we still recommend enabling DKIM signatures to enhance the deliverability of your mail with DKIM-compliant email providers. [To access your legacy TXT records, download Legacy TXT record set as .csv](#).

Summary for sk1262@srmist.edu.in

| | | |
|-----------------|---|-----------------------|
| Identity status | Amazon Resource Name (ARN) | AWS Region |
| Verified | arn:aws:ses:ap-south-1:163431720427:identity/dg8258@srmist.edu.in | Asia Pacific (Mumbai) |

Authentication Notifications Authorization Configuration set Tags

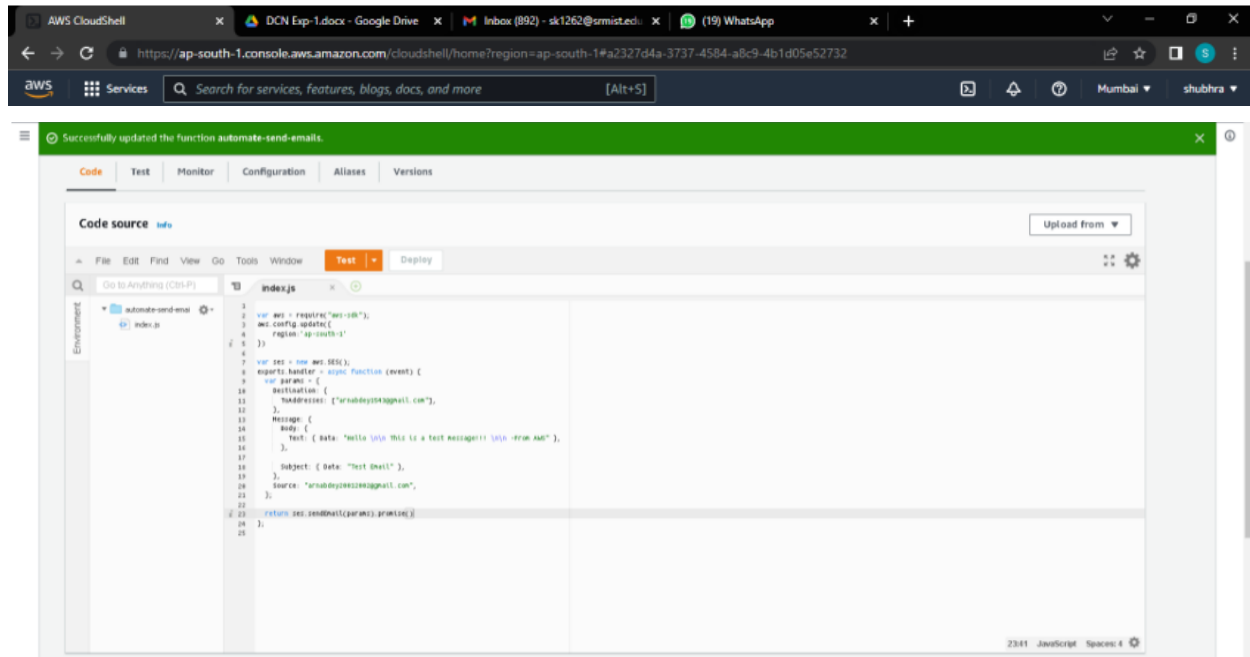
3. Create two identities (email address).
One for sending emails and another for receiving.
4. Create an IAM role.
Give Use case as lambda and give full access to cloudwatch, SES.
5. Go to Lambda Service, create a lambda function.
Give name, runtime as NodeJS, execution role as created IAM role previously.

The screenshot shows the AWS Lambda console interface for creating a new function. The browser tabs at the top include 'AWS CloudShell', 'DCN Exp-1.docx - Google Drive', 'Inbox (892) - sk1262@srmist.edu', and '(19) WhatsApp'. The URL bar shows the console URL for the 'ap-south-1' region. The 'Basic information' section contains the following details:

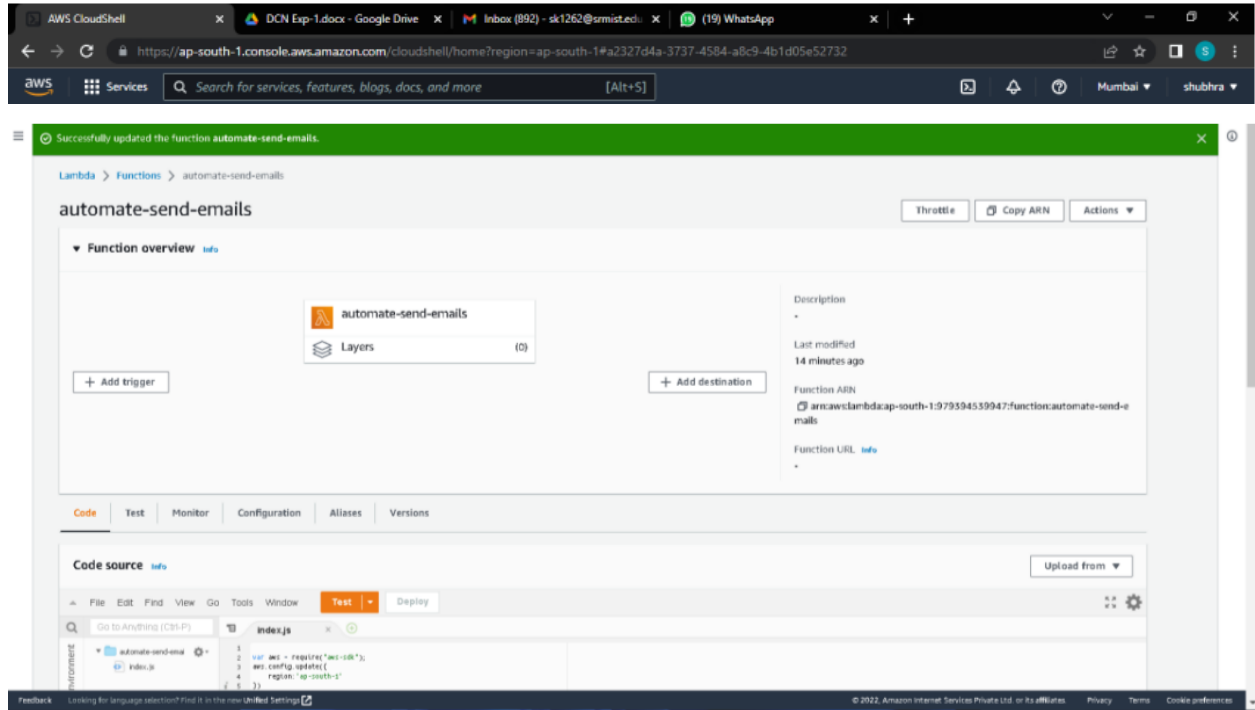
- Function name:** 'automate-send-emails' (with a note to use only letters, numbers, hyphens, or underscores).
- Runtime:** 'Node.js 16.x' (selected from a dropdown menu).
- Architecture:** 'x86_64' (selected from radio buttons, with 'arm64' as an alternative).
- Permissions:** A section titled 'Change default execution role' where 'Use an existing role' is selected. The dropdown menu shows 'AutomateSendEmailRole'.

Below the role selection, there is a note: 'Choose an existing role that you've created to be used with this Lambda function. The role must have permission to upload logs to Amazon CloudWatch Logs.' and a link to 'View the AutomateSendEmailRole role on the IAM console.'

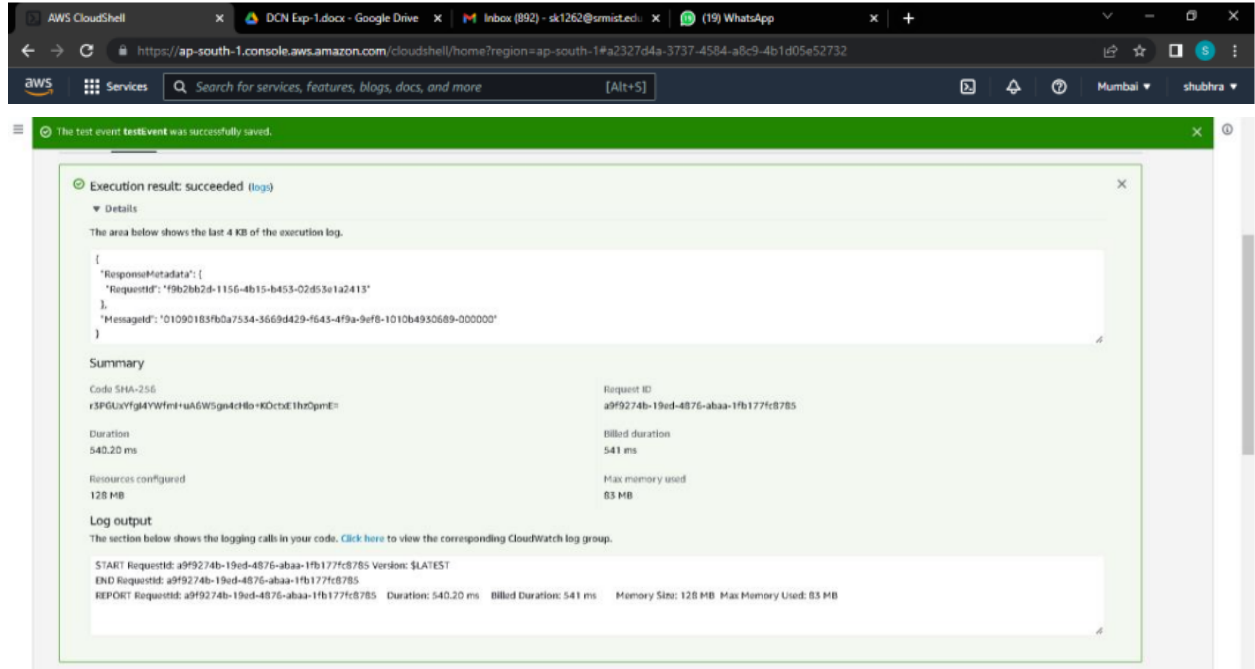
6. Use this template for the code:



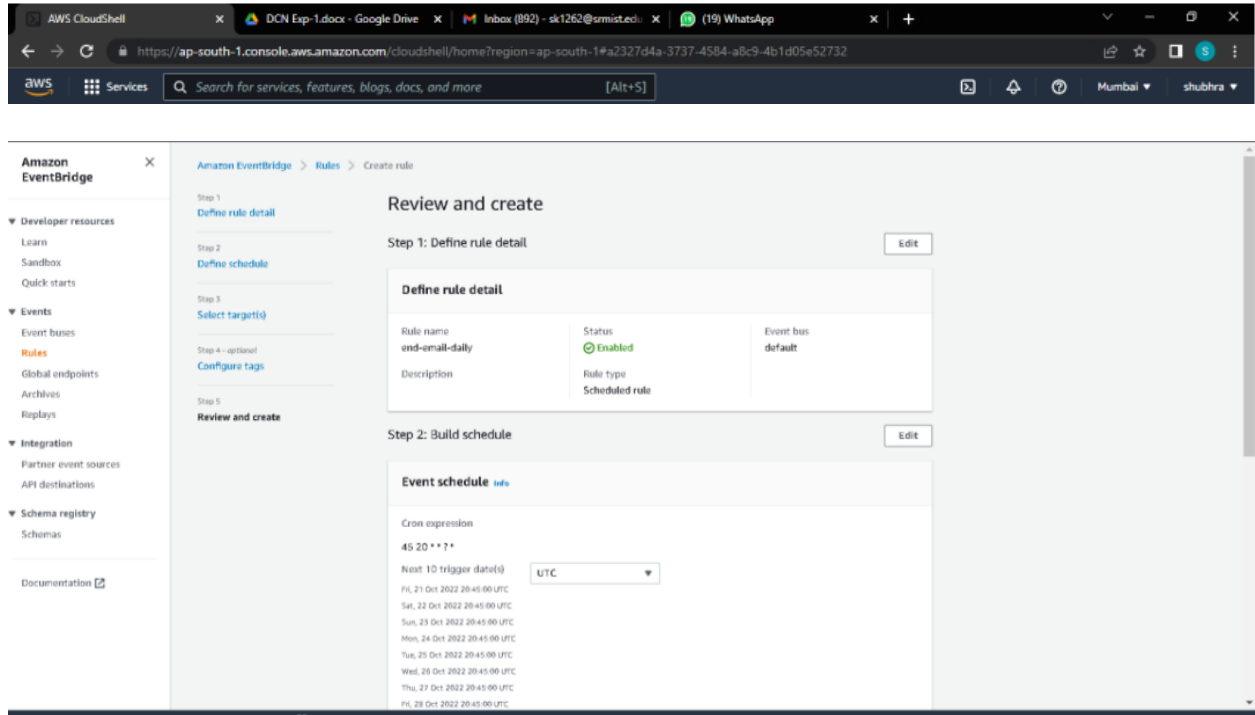
```
1)
2) var aws = require("aws-sdk");
3) var ses = new aws.SES({ region: "us-west-2" });
4) exports.handler = async function (event) {
5)   var params = {
6)     Destination: {
7)       ToAddresses: ["RecipientEmailAddress"],
8)     },
9)     Message: {
10)      Body: {
11)        Text: { Data: "Test" },
12)      },
13)      Subject: { Data: "Test Email" },
14)    },
15)    Source: "SourceEmailAddress",
16)  };
17)
18)  return ses.sendEmail(params).promise()
19)
20)  };
```



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

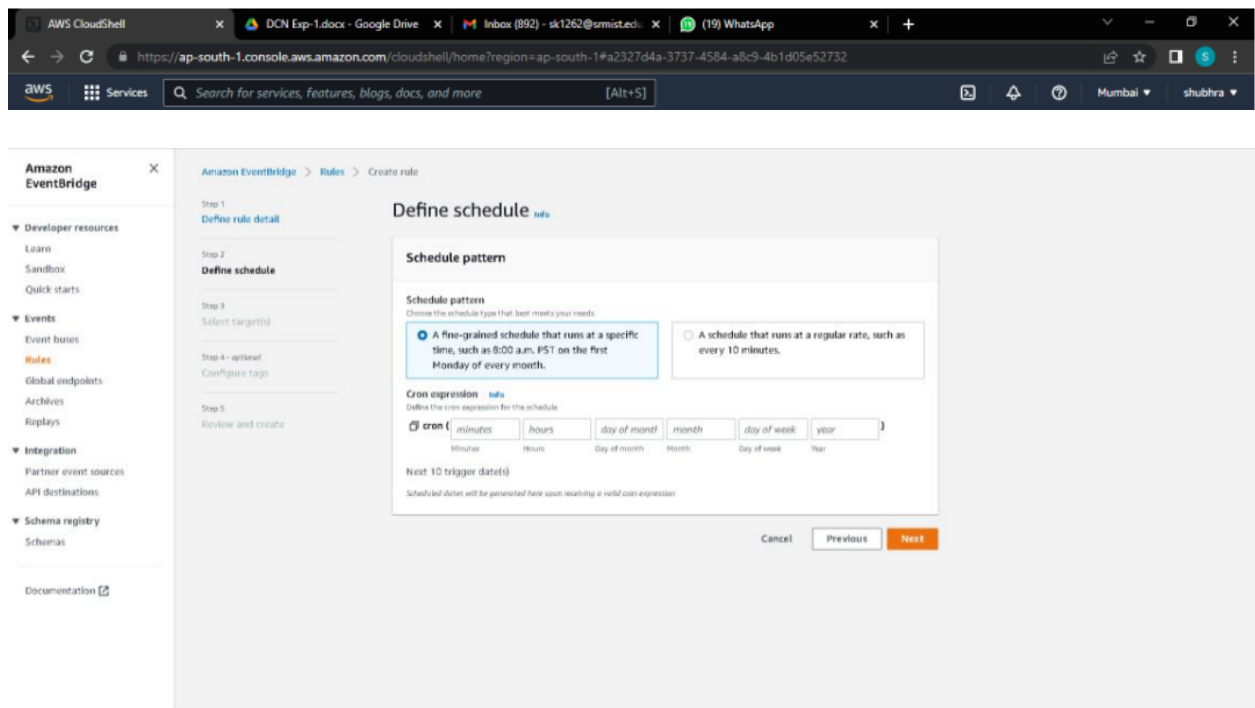


8. For scheduled daily report, go to AWS Cloudwatch , navigate to rule section (now called as eventBridge).



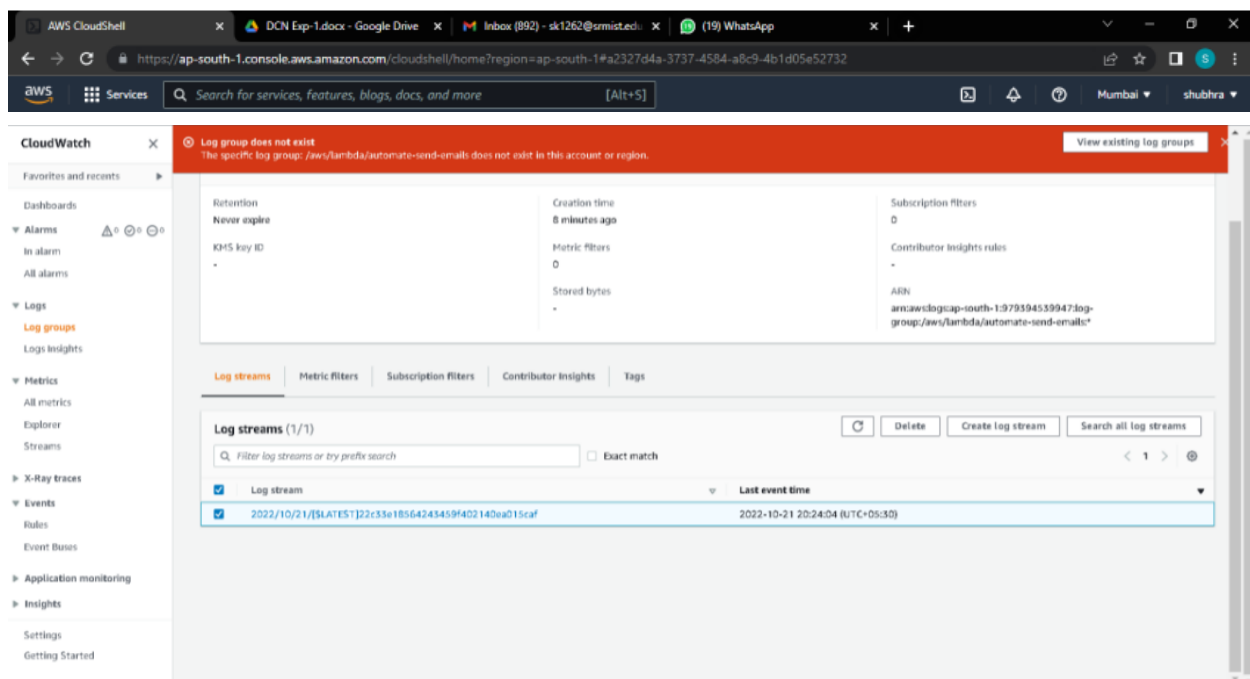
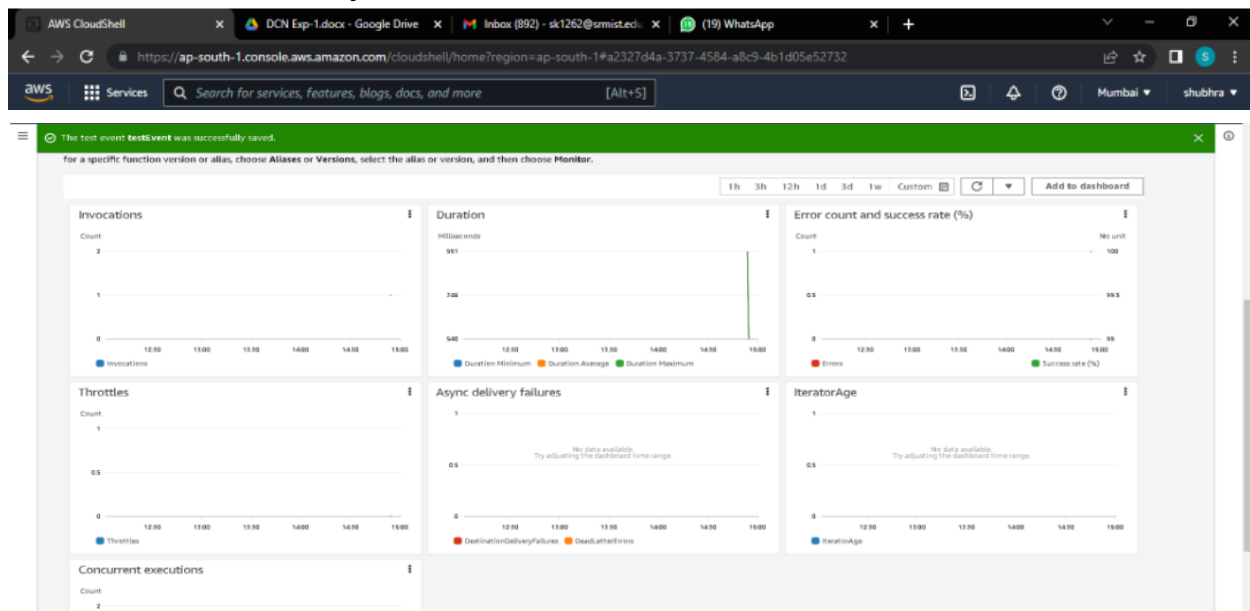
9. Create rule- give name, ruletype- schedule, use cron expression for schedule pattern .

For e.g. : 15 19 * * ? *



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

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.

