# Disk Space Utilization Notification Using SNS

1. Create a script on your instance which writes the disk usage to a file and send an email to specific mail
2. Verify the recipient mail id in SNS consol
3. Configure simple notification service (SNS) for delivering the mail notifications
4. Verify the mail sent

STEPS

1. Login to AWS account and create an EC2-instance
2. Create an IAM Role: -
   a. Go to IAM Console: Navigate to the IAM service in the AWS Management Console.
   b. Create IAM Role:
      • Click on "Roles" in the left-hand menu.
      • Click "Create role".
      • Choose "AWS service" as the type of trusted entity, and select "EC2" as the service that will use this role.
      • Attach policies: Search for " AmazonSNSFullAccess" and select it
      • Name the role appropriately (e.g., SNS-Role).
   c. . Attach IAM Role to EC2 Instance:
      • Once the role is created, go to your EC2 instances.
      • Select the instance you want to attach the role to.
      • Click on actions- Security- Modify IAM role and
      • Choose the IAM role you created and attach it to the instance
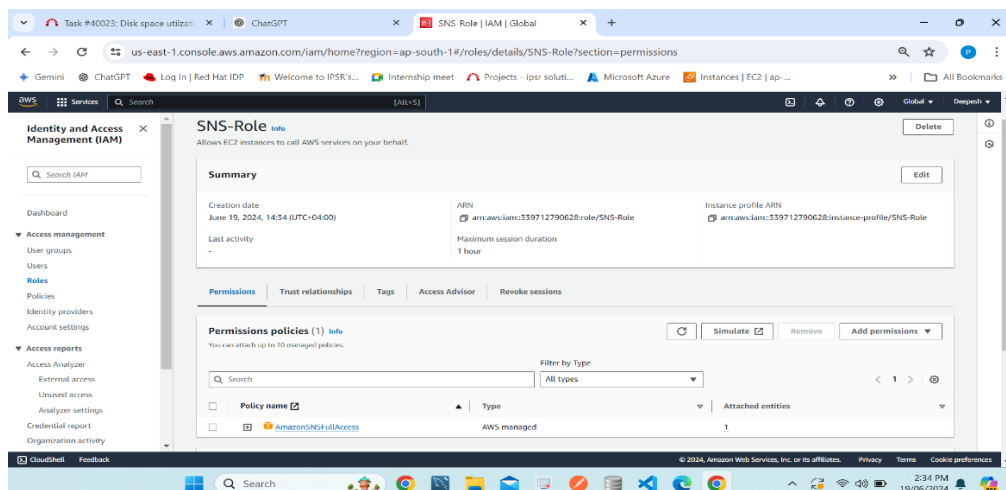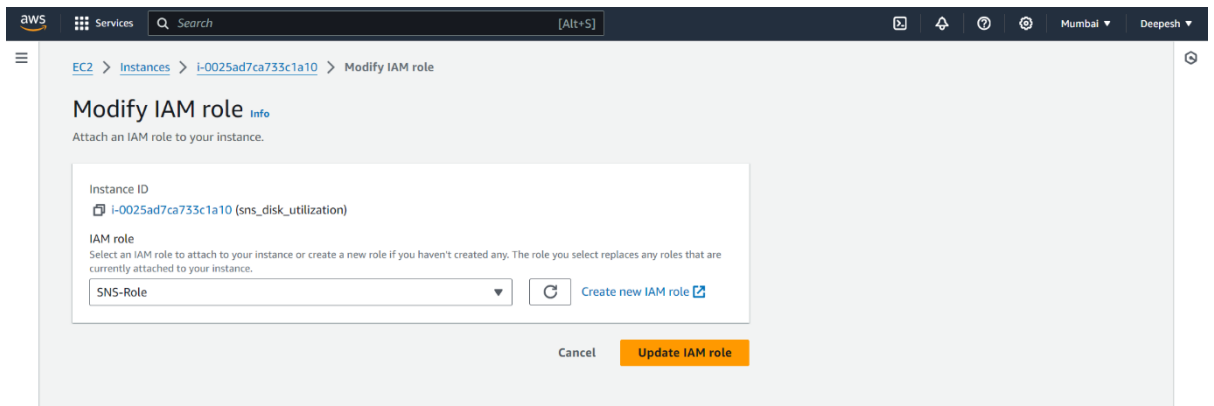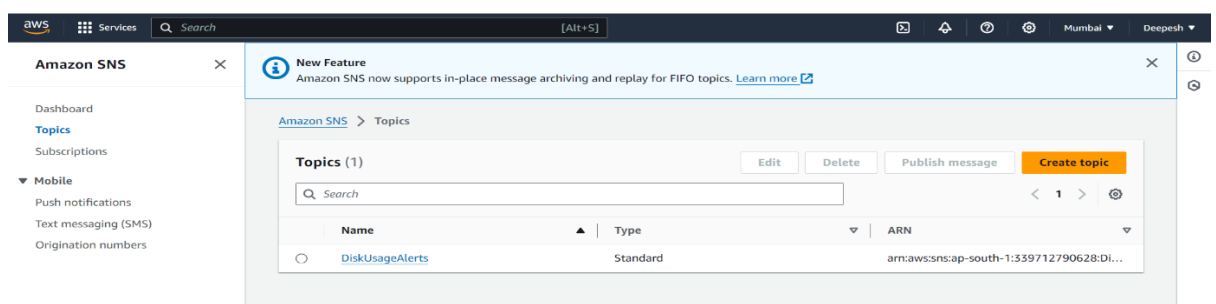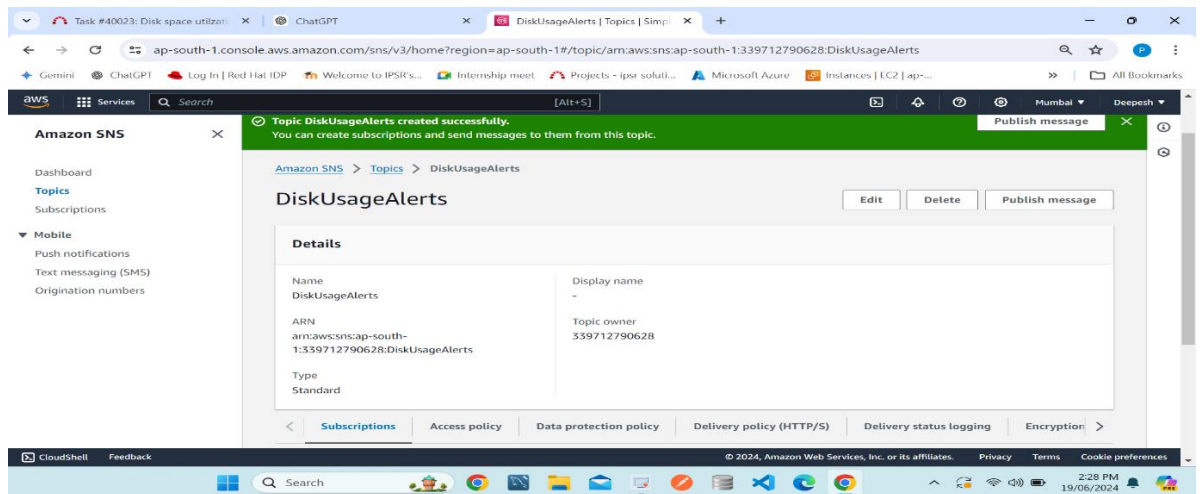
3. Verify the Recipient Email ID in SNS Console

    a. Create an SNS Topic

        • Go to the AWS Management Console and navigate to the SNS (Simple Notification Service) console:

        • URL: AWS SNS Console

        • In the left navigation pane, click on "Topics".

        • Click on the "Create topic" button.

        • Choose "Standard" as the type of topic.

        • Enter a name for your topic (e.g., DiskUsageAlerts)

        • Click "Create topic".

b. Subscribe to the Topic

- Select the topic you just created.

- Click on "Create subscription".

- For "Protocol", select "Email".

- For "Endpoint", enter the recipient email address (e.g. pujajp993@gmail.com).
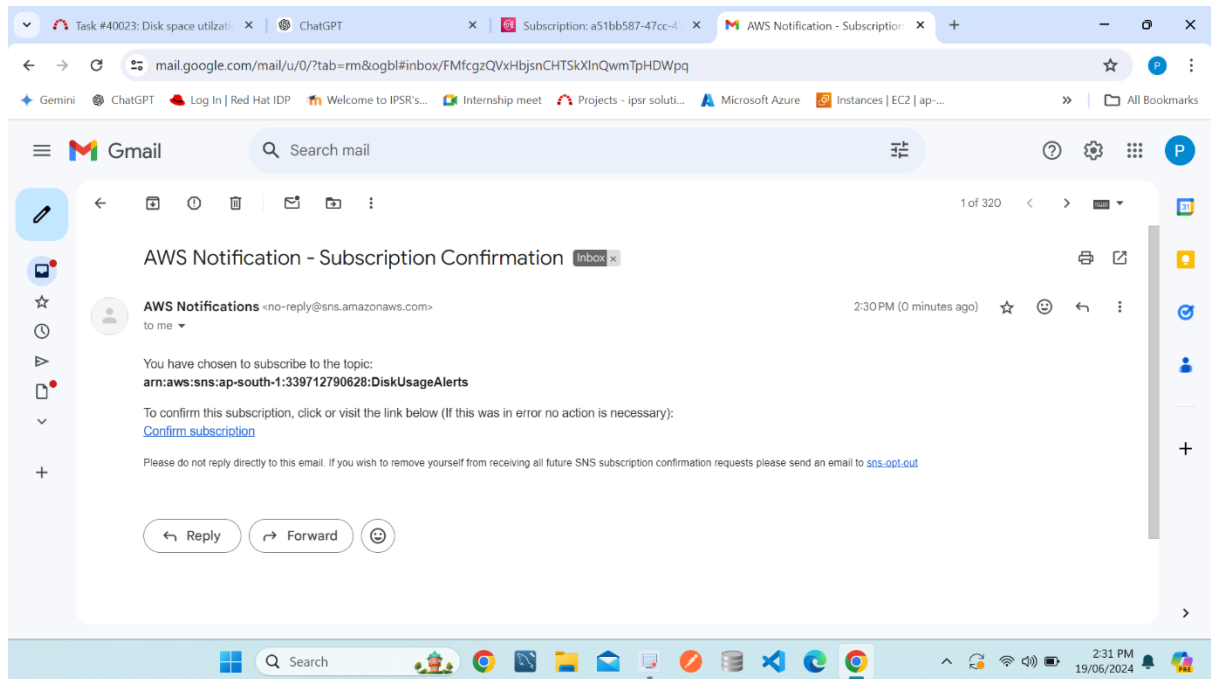
- Click "Create subscription".

c. Confirm the Subscription

- Check your email inbox for a message from AWS Notifications.
- Open the email and click the "Confirm subscription" link.

4. Configure AWS CLI

a. Install AWS CLI

    # yum install aws-cli -y

b. Configure AWS CLI with the IAM user's credentials:

    # aws configure

Enter the Access Key ID (blank), Secret Access Key(blank), default region name(ap-south-1), and default output format(table)

```
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]# yum install aws-cli -y
Last metadata expiration check: 0:10:21 ago on Wed Jun 19 10:27:00 2024.
Package awscli-2-2.15.30-1.amzn2023.0.1.noarch is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]# aws configure
AWS Access Key ID [None]:
AWS Secret Access Key [None]:
Default region name [None]: ap-south-1
Default output format [None]: table
[root@ip-172-31-15-87 ~]#
```

5. Write a Script to Publish to SNS

    # vi disk_usage_report.sh

root@ip-172-31-15-87:~

```bash
#!/bin/bash

# Define variables
DISK_USAGE_FILE="/root/disk_usage.txt"
TOPIC_ARN="arn:aws:sns:ap-south-1:339712790628:DiskUsageAlerts"
EMAIL_SUBJECT="Disk Usage Report"
EMAIL_BODY="Disk Usage Report:"

# Write disk usage to a file
df -h > $DISK_USAGE_FILE

# Publish to SNS
MESSAGE=$(cat $DISK_USAGE_FILE)
aws sns publish --topic-arn "$TOPIC_ARN" --subject "$EMAIL_SUBJECT" --message "$EMAIL_BODY $MESSAGE"

~
~
```

6. Make sure the script is executable before running it:

    # chmod +x disk_usage_report.sh

7. Run the Script and check the mail

    # ./disk_usage_report.sh

```
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]# vi disk_usage_report.sh
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]# chmod +x disk_usage_report.sh
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]# ./disk_usage_report.sh
----------------------------------------------------
|                       Publish                     |
+-----------+----------------------------------------+
| MessageId | 5936e994-838b-5ef8-a344-b7783a18035a  |
+-----------+----------------------------------------+
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]# ls
disk_usage.txt  disk_usage_report.sh
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]# cat disk_usage.txt
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M     0  4.0M   0% /dev
tmpfs           475M     0  475M   0% /dev/shm
tmpfs           190M  2.9M  188M   2% /run
/dev/xvda1      8.0G  1.6G  6.5G  20% /
tmpfs           475M     0  475M   0% /tmp
/dev/xvda128     10M  1.3M  8.7M  13% /boot/efi
tmpfs            95M     0   95M   0% /run/user/1000
[root@ip-172-31-15-87 ~]#
[root@ip-172-31-15-87 ~]#
```

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Disk Usage Report: Filesystem   Size Used Avail Use% Mounted on
devtmpfs   4.0M   0 4.0M 0% /dev
tmpfs   475M   0 475M 0% /dev/shm
tmpfs   190M 2.9M 188M 2% /run
/dev/xvda1   8.0G 1.6G 6.5G 20% /
tmpfs   475M   0 475M 0% /tmp
/dev/xvda128   10M 1.3M 8.7M 13% /boot/efi
tmpfs   95M   0 95M 0% /run/user/1000

--
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