

Creating S3 Event Notifications

Using an SNS Topic

Objective:

Automate the notification process for specific events in an S3 bucket by integrating Amazon S3 with Amazon SNS.

Showcase expertise in AWS services and cloud automation through event-driven architecture.

Services Integrated:

Amazon S3: Store and manage data. Triggers event notifications when specific operations occur (e.g., object creation).

Amazon SNS: Distribute notifications to multiple subscribers in various formats like Email.

Implementation Guide:

Step 1: Create an S3 Bucket

Log in to the AWS Management Console.

Navigate to the S3 service.

Create a bucket and enable event notifications for operations like PUT, POST, or DELETE or All.

Step 2: Create an SNS Topic

Go to the SNS service in AWS.

Create a new topic (Event-notification-topic).

Add a subscription to the topic (parthsarathi.12606@gmail.com).

Step 3: Modify the Access Policy for SNS

Update the SNS topic's default access policy with the example policy from the [AWS Guide](#).

Ensure the policy allows S3 to publish notifications to the topic.

Access Policy:

```
{
  "Version": "2012-10-17",
  "Id": "example-ID",
  "Statement": [
    {
      "Sid": "example-statement-ID",
      "Effect": "Allow",
      "Principal": {
        "Service": "s3.amazonaws.com"
      },
      "Action": "SNS:Publish",
      "Resource":
"arn:aws:sns:us-east-1:307946662962:Event-notification-topic",
      "Condition": {
        "StringEquals": {
          "aws:SourceAccount": "307946662962"
        },
        "ArnLike": {
          "aws:SourceArn": "arn:aws:s3:::event-notification-s3-bucket-for-sns"
        }
      }
    }
  ]
}
```

Step 4: Configure Event Notifications in S3

Go back to the S3 bucket(event-notification-s3-bucket-for-sns).

Add an event notification configuration with the SNS topic ARN.

Step 5: Testing the Setup

Upload or delete a file in the S3 bucket.

Verify the notification is received on the SNS subscription (e.g., email inbox).

Topic Creation

The screenshot shows the Amazon SNS console interface. At the top, a green banner indicates 'Topic Event-notification-topic created successfully. You can create subscriptions and send messages to them from this topic.' with a 'Publish message' button. The left sidebar shows the navigation menu with 'Amazon SNS' selected, and 'Topics' is the active view. The main content area displays the 'Event-notification-topic' details, including its name, ARN, and type. Below the details, there are tabs for 'Subscriptions', 'Access policy', 'Data protection policy', 'Delivery policy (HTTP/S)', 'Delivery status logging', 'Encryption', and 'Tag'. The 'Subscriptions' tab is active, showing a table with 0 subscriptions. A 'Create subscription' button is visible at the bottom of the table.

Subscription Creation Setup

The screenshot shows the 'Create subscription' page in the Amazon SNS console. The page has a breadcrumb trail: 'Amazon SNS > Subscriptions > Create subscription'. The 'Details' section contains the following fields: 'Topic ARN' (pre-filled with 'arn:aws:sns:us-east-1:307946662962:Event-notification-topic'), 'Protocol' (set to 'Email'), and 'Endpoint' (pre-filled with 'praveen.lahase2606@gmail.com'). A blue information box states: 'After your subscription is created, you must confirm it. Info'. Below the details, there are two optional sections: 'Subscription filter policy - optional' and 'Redrive policy (dead-letter queue) - optional'. The bottom of the page shows the footer with '© 2025, Amazon Web Services, Inc. or its affiliates.' and links for 'Privacy', 'Terms', and 'Cookie preferences'.

Subscription Creation

The screenshot shows the AWS Management Console interface for creating an SNS subscription. At the top, a green success message states: "Subscription to Event-notification-topic created successfully. The ARN of the subscription is arn:aws:sns:us-east-1:307946662962:Event-notification-topic:1c9342ff-2330-42ec-b823-affedecdee55." Below this, the subscription details are displayed for "Subscription: 1c9342ff-2330-42ec-b823-affedecdee55".

Details	
ARN arn:aws:sns:us-east-1:307946662962:Event-notification-topic:1c9342ff-2330-42ec-b823-affedecdee55	Status Pending confirmation
Endpoint parthsarathi2606@gmail.com	Protocol EMAIL
Topic Event-notification-topic	
Subscription Principal arn:aws:iam::307946662962:root	

Below the details, there are tabs for "Subscription filter policy" and "Redrive policy (dead-letter queue)". The "Subscription filter policy" tab is active, showing a message: "No filter policy configured for this subscription. To apply a filter policy, edit this subscription." The bottom of the console shows the AWS logo, navigation menu, and footer with copyright information.

Event Notification Creation

The screenshot shows the AWS Management Console interface for creating an S3 event notification. At the top, a green success message states: "Successfully created event notification 'S3NotificationSNS'. Operation successfully completed." Below this, the details for "event-notification-s3-bucket-for-sns" are displayed.

event-notification-s3-bucket-for-sns

Objects | Metadata - Preview | **Properties** | Permissions | Metrics | Management | Access Points

Bucket overview		
AWS Region US East (N. Virginia) us-east-1	Amazon Resource Name (ARN) arn:aws:s3::event-notification-s3-bucket-for-sns	Creation date January 5, 2025, 14:21:14 (UTC+05:30)

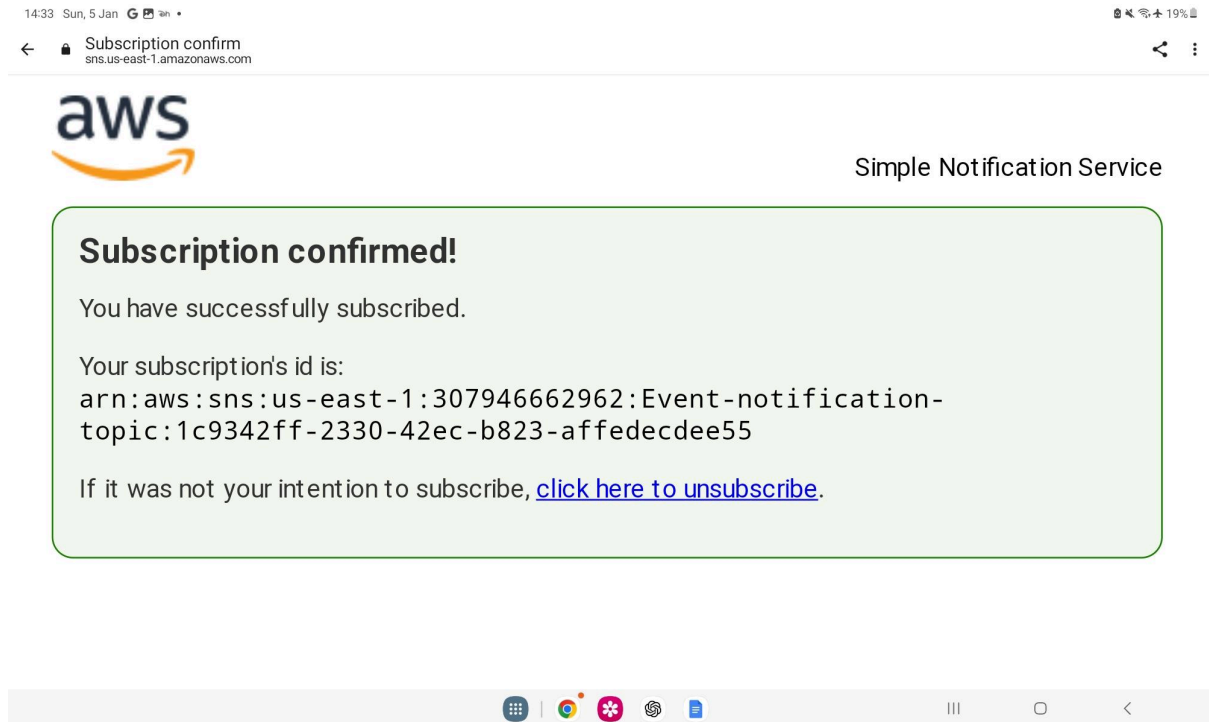
Bucket Versioning [Edit](#)

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](#)

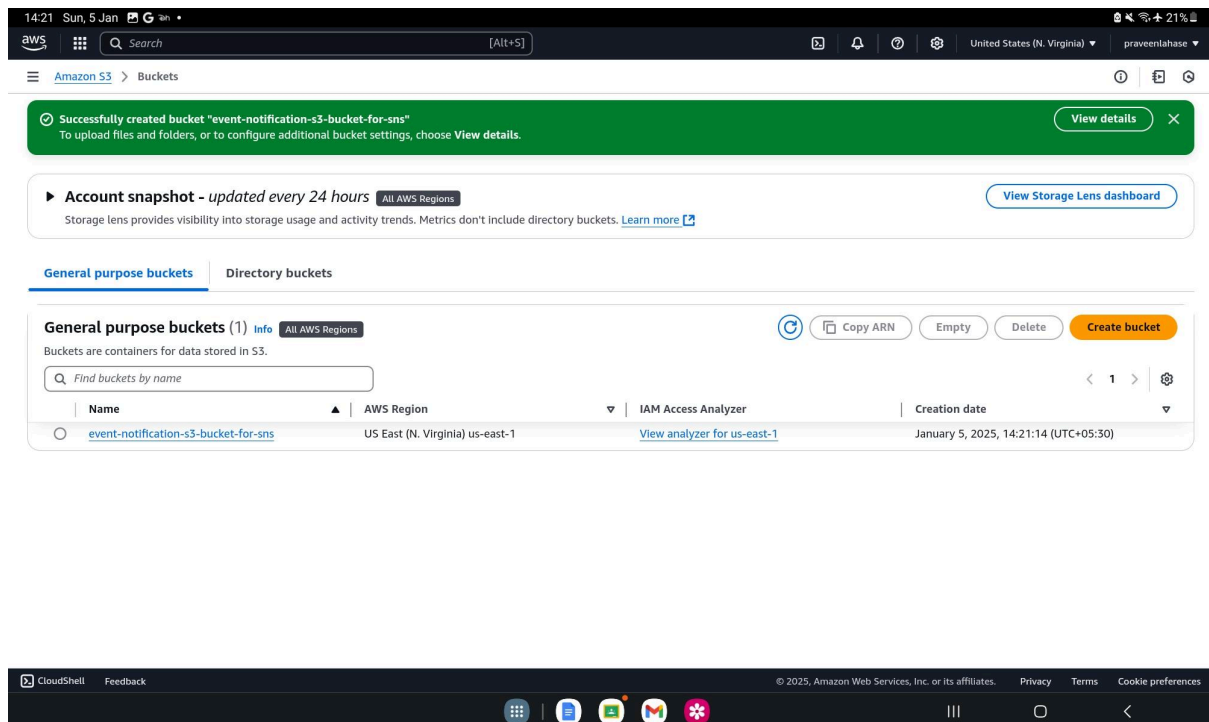
Bucket Versioning
Disabled

Multi-factor authentication (MFA) delete
An additional layer of security that requires multi-factor authentication for changing Bucket Versioning settings and permanently deleting object versions. To modify MFA delete settings, use the AWS CLI, AWS SDK, or the Amazon S3 REST API. [Learn more](#)
Disabled

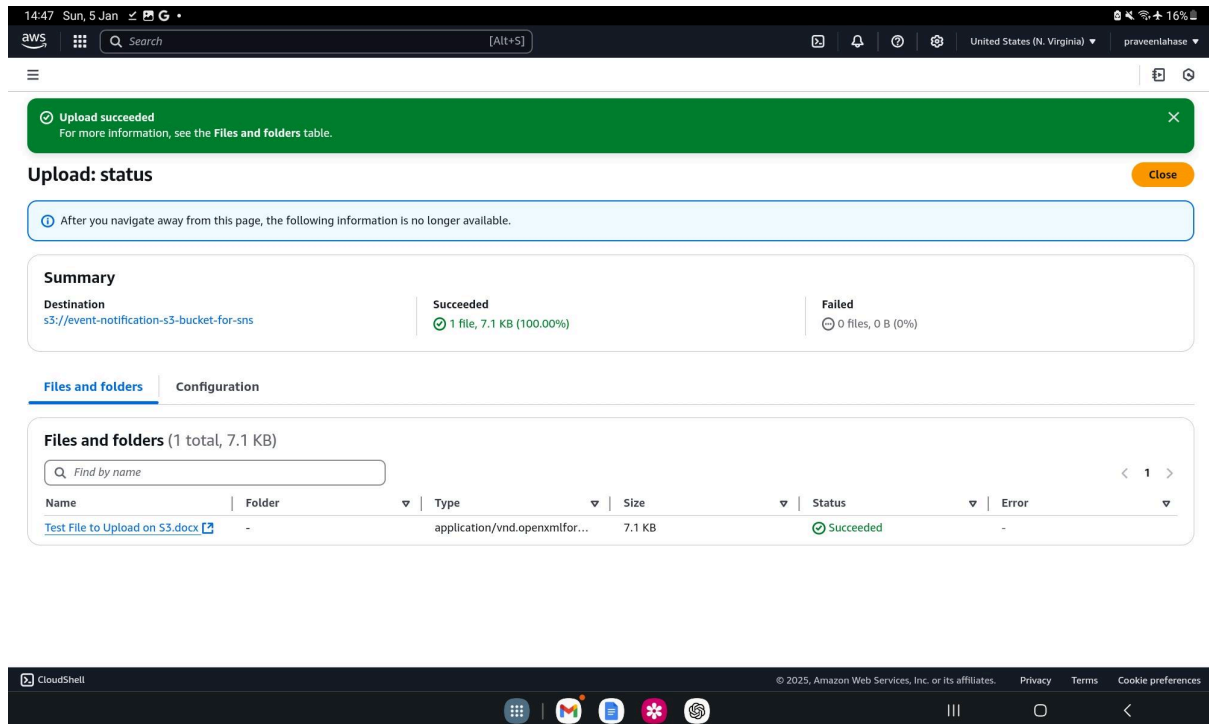
Subscription Notification



Bucket Creation



File Upload to s3



14:47 Sun, 5 Jan [Search] [Alt+S] United States (N. Virginia) praveenlahase

Upload succeeded
For more information, see the [Files and folders](#) table.

Upload: status Close

After you navigate away from this page, the following information is no longer available.

Summary

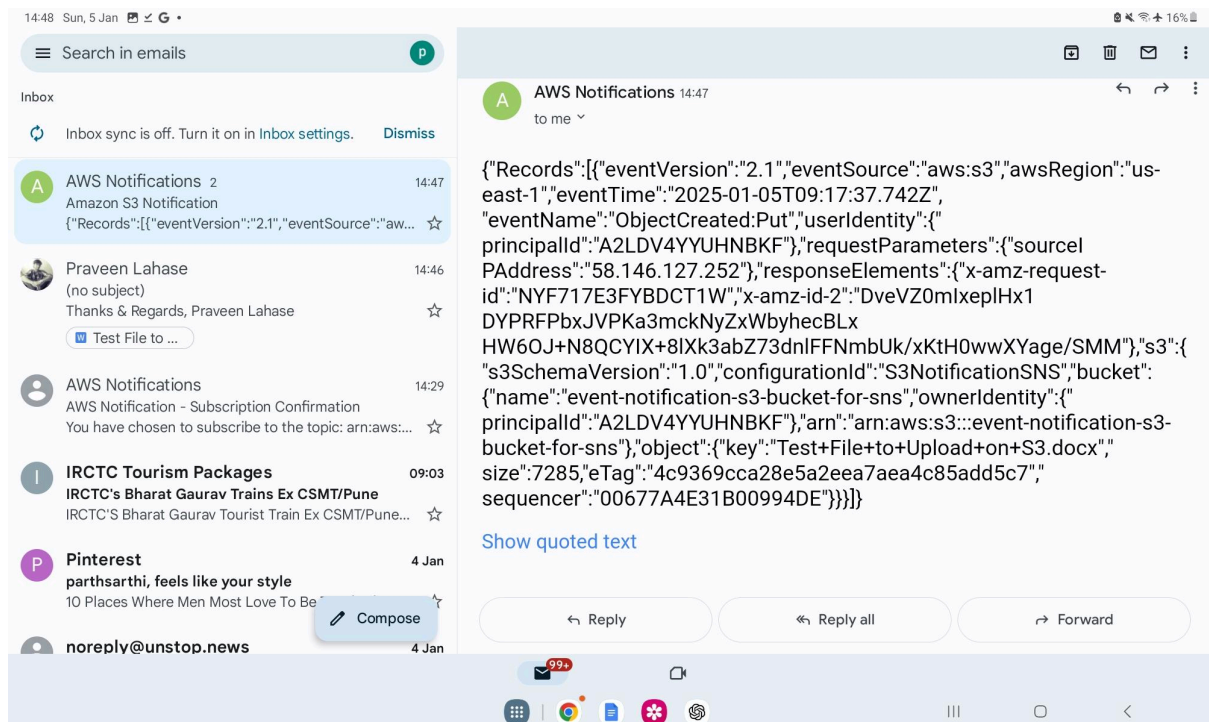
Destination s3://event-notification-s3-bucket-for-sns	Succeeded 1 file, 7.1 KB (100.00%)	Failed 0 files, 0 B (0%)
---	--	------------------------------------

Files and folders (1 total, 7.1 KB)

Find by name

Name	Folder	Type	Size	Status	Error
Test File to Upload on S3.docx	-	application/vnd.openxmlfor...	7.1 KB	Succeeded	-

AWS notification for file upload on s3



14:48 Sun, 5 Jan [Search in emails] [P]

Inbox

Inbox sync is off. Turn it on in [Inbox settings](#). Dismiss

AWS Notifications 2 14:47
Amazon S3 Notification
{ "Records": [{ "eventVersion": "2.1", "eventSource": "aws:s3", "awsRegion": "us-east-1", "eventTime": "2025-01-05T09:17:37.742Z", "eventName": "ObjectCreated:Put", "userIdentity": { "principalId": "A2LDV4YYUHNBFK", "requestParameters": { "sourceIPAddress": "58.146.127.252", "responseElements": { "x-amz-request-id": "NYF717E3FYBDCT1W", "x-amz-id-2": "DveVZ0mlxepIHx1DYPRFPbxJVPKa3mckNyZxWbyhecBLxHW60J+N8QCYIX+8IXk3abZ73dnIFFNmbUk/xKtH0wwXYage/SMM" }, "s3": { "s3SchemaVersion": "1.0", "configurationId": "S3NotificationSNS", "bucket": { "name": "event-notification-s3-bucket-for-sns", "ownerIdentity": { "principalId": "A2LDV4YYUHNBFK", "arn": "arn:aws:s3:::event-notification-s3-bucket-for-sns" }, "object": { "key": "Test+File+to+Upload+on+S3.docx", "size": 7285, "eTag": "4c9369cca28e5a2eea7aea4c85add5c7", "sequencer": "00677A4E31B00994DE" } } } } }] }

Praveen Lahase 14:46
(no subject)
Thanks & Regards, Praveen Lahase
[Test File to ...](#)

AWS Notifications 14:29
AWS Notification - Subscription Confirmation
You have chosen to subscribe to the topic: arn:aws:...

IRCTC Tourism Packages 09:03
IRCTC's Bharat Gaurav Trains Ex CSMT/Pune
IRCTC'S Bharat Gaurav Tourist Train Ex CSMT/Pune...

Pinterest 4 Jan
parthsarathi, feels like your style
10 Places Where Men Most Love To Be

noreply@unstop.news 4 Jan

AWS Notifications 14:47
to me

`{ "Records": [{ "eventVersion": "2.1", "eventSource": "aws:s3", "awsRegion": "us-east-1", "eventTime": "2025-01-05T09:17:37.742Z", "eventName": "ObjectCreated:Put", "userIdentity": { "principalId": "A2LDV4YYUHNBFK", "requestParameters": { "sourceIPAddress": "58.146.127.252", "responseElements": { "x-amz-request-id": "NYF717E3FYBDCT1W", "x-amz-id-2": "DveVZ0mlxepIHx1DYPRFPbxJVPKa3mckNyZxWbyhecBLxHW60J+N8QCYIX+8IXk3abZ73dnIFFNmbUk/xKtH0wwXYage/SMM" }, "s3": { "s3SchemaVersion": "1.0", "configurationId": "S3NotificationSNS", "bucket": { "name": "event-notification-s3-bucket-for-sns", "ownerIdentity": { "principalId": "A2LDV4YYUHNBFK", "arn": "arn:aws:s3:::event-notification-s3-bucket-for-sns" }, "object": { "key": "Test+File+to+Upload+on+S3.docx", "size": 7285, "eTag": "4c9369cca28e5a2eea7aea4c85add5c7", "sequencer": "00677A4E31B00994DE" } } } } }] }`

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Thank you