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README.md



AWS SNS to SQS Message Delivery Project

Project Overview

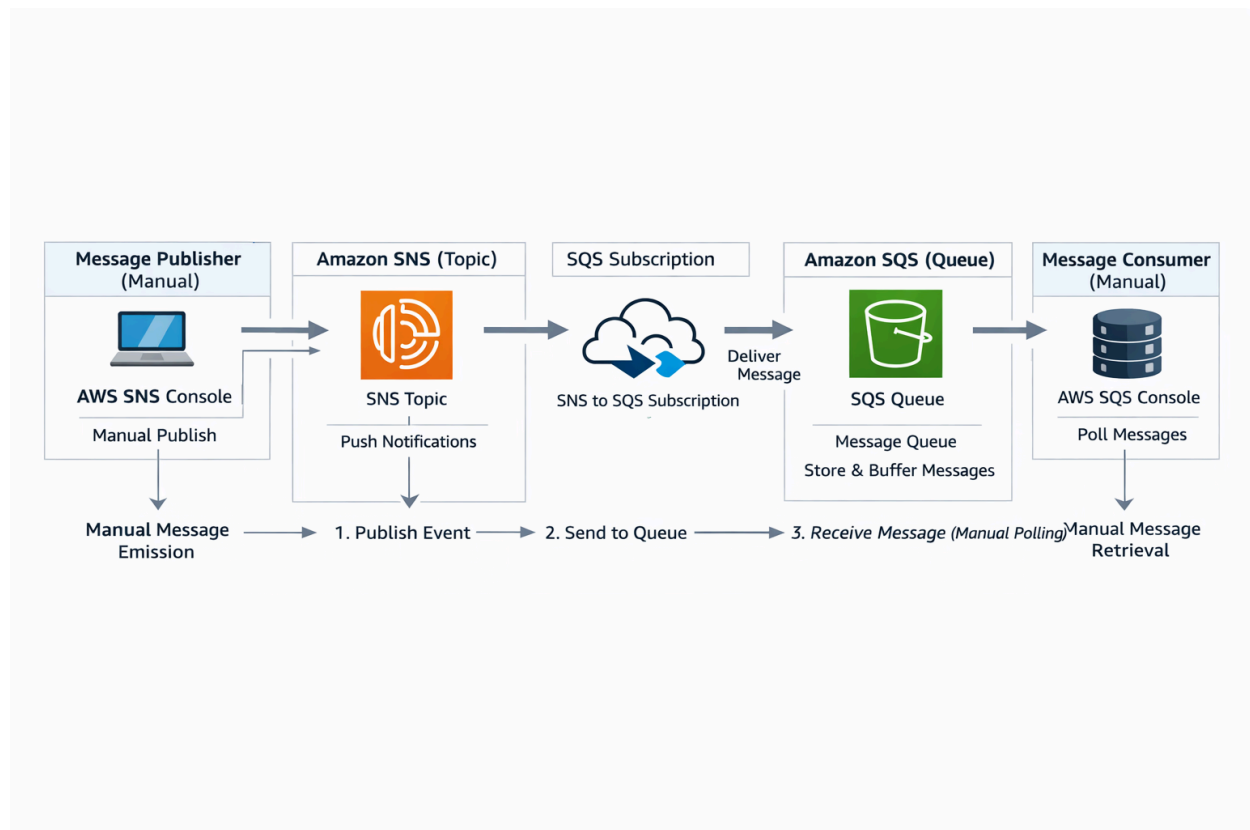
This project demonstrates how to use **Amazon Simple Notification Service (SNS)** and **Amazon Simple Queue Service (SQS)** together to build a **decoupled, event-driven architecture**.

In this setup:

- A message is published to an **SNS Topic**
- The SNS topic delivers the message to an **SQS Queue**
- The message is then available for processing by a consumer

This architecture is commonly used in **microservices, event notifications, and asynchronous processing systems**.

Architecture Diagram



AWS Services Used

- **Amazon SNS** – Message publishing and fan-out service
- **Amazon SQS** – Fully managed message queue
- **AWS IAM** – Permissions (handled automatically by AWS)

Project Objectives

- Create an SNS topic
- Create an SQS queue
- Subscribe SQS to SNS
- Publish messages to SNS
- Receive messages in SQS
- Understand SNS → SQS message flow

Architecture Flow

1. Publisher sends a message to SNS
2. SNS receives the message
3. SNS pushes the message to subscribed SQS queue
4. SQS stores the message safely
5. Consumer polls the queue and processes the message

Step-by-Step Implementation

Step 1: Create an SQS Queue

1. Open **AWS Console**
2. Go to **Amazon SQS**
3. Click **Create queue**
4. Select:
 - Queue type: **Standard**
 - Queue name: `SQS-Demo`
5. Keep default settings
6. Click **Create queue**

✅ SQS queue created successfully

Step 2: Create an SNS Topic

1. Go to **Amazon SNS**
2. Click **Create topic**
3. Select:
 - Type: **Standard**
 - Name: `global`
4. Click **Create topic**

✅ SNS topic created successfully

✂ Step 3: Subscribe SQS Queue to SNS Topic

1. Open the **SNS Topic**
2. Go to **Subscriptions**

3. Click **Create subscription**

4. Configure:

- Protocol: **Amazon SQS**
- Endpoint: Select **SQS Queue ARN**

5. Click **Create subscription**

The screenshot shows the AWS Management Console interface for an Amazon SNS subscription. The left sidebar shows the navigation menu with 'Amazon SNS' selected. The main content area displays the details for a subscription with ARN `arn:aws:sns:us-east-1:003380494838:global:e0675f63-753b-4c78-80bd-7c44aca8f938`. The status is 'Confirmed', the protocol is 'SQS', and the endpoint is `arn:aws:sqs:us-east-1:003380494838:SQS-Demo`. The topic is 'global' and the subscription principal is `arn:aws:iam::003380494838:root`. Below the details, there is a section for 'Subscription filter policy' which indicates that no filter policy is currently configured for this subscription.

✅ SNS and SQS are now connected

🌱 Step 4: Verify SQS Access Policy (Important)

SNS must have permission to send messages to SQS.

1. Open **Amazon SQS**
2. Select your queue
3. Go to **Access Policy**
4. Ensure policy allows SNS to send messages

Example policy:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "Allow-SNS-SendMessage",
      "Effect": "Allow",
      "Principal": {
        "Service": "sns.amazonaws.com"
      },
      "Action": "SQS:SendMessage",
      "Resource": "YOUR_SQS_QUEUE_ARN",
    }
  ]
}
```



```

    "Condition": {
      "ArnEquals": {
        "aws:SourceArn": "YOUR_SNS_TOPIC_ARN"
      }
    }
  }
]
}

```

Step 5: Publish a Message to SNS

1. Open SNS Topic
2. Click Publish message
3. Enter:
 - o Subject: Order Notification
 - o Message:

New order has been placed successfully.



4. Click Publish

✓ Message sent to SNS topic

Step 6: Receive Message from SQS

1. Open Amazon SQS
2. Select the queue
3. Click Send and receive messages
4. Click Poll for messages

The screenshot shows the AWS Management Console interface for the 'Send and receive messages' page of an Amazon SQS queue named 'SQS-Demo'. A modal window titled 'Received message: e6b46a69-bdfd-4434-80b0-ef955eeb1630' is open, displaying the message body with the following details:

- Subject: "Order Created",
- Message: "New order placed successfully !!!\n",
- Timestamp: "2025-12-26T14:08:01.178Z",

The modal also shows a 'Done' button. In the background, the 'Receive messages' section indicates 2 messages are available. A table lists the messages:

ID	Sent	Size	Receive count
47dd12c1-4bfe-4506-8685-456b18390679	2025-12-26T19:29+05:30	9 bytes	3
e6b46a69-bdfd-4434-80b0-ef955eeb1630	2025-12-26T19:38+05:30	963 bytes	1



Message published from SNS is now visible in SQS

Conclusion

This project demonstrates how Amazon SNS and Amazon SQS work together to create a reliable, scalable, and decoupled messaging system. It is a foundational pattern used in many real-world AWS architectures.