**How does Amazon SNS message filtering work?**

Let’s now understand how Amazon SNS uses message filtering to deliver a subset of SNS topic messages to the subscribed endpoints. For simplicity, let’s take a business website that routes user requests to different backend servers.

This server network comprises of:

* 1 server to handle user requests of “type 1.”
* 1 server to handle user requests of “type 2.”
* 1 server for data analytics that handles user requests of both “type 1” and “type 2.”

Here are the 6 steps to implement message filtering with the Amazon SNS service:

**1) Create an Amazon SNS Topic**

The first step is to create the Amazon SNS topic that will publish messages – whenever any user request is made on the website.

* Open the Aws Management Console and sign in with your username and password.
* Open the service console for Amazon SNS using the AWS Services search box.
* From the landing page of the SNS console, click “Start with an overview” followed by “Topics” from the left side menu.
* Next, click “Create topic” and then type the name of your topic (“Topic\_1”) in the “Topic name” box of the dialog box (shown below).
* Click “Create topic” in the above dialog box to create and add the new topic to the “Topic” details page.

**2) Create the Amazon SQS Queues**

The next step is to create the Amazon SQS queues that will be subscribed to the SNS topic. The website backend servers poll the user requests from its corresponding SQS message queue. For this example:

* Queue\_1 handles user requests of “type 1.”
* Queue\_2 handles user requests of “type 2.”
* Queue\_3 handles user requests of both “type 1” and “type 2.”

1. Open the AWS SQS Console and sign in with your username and password.
2. Next, from the “Create New Queue” page, enter “Queue\_1” in the “Queue Name” box. With the “Standard Queue” option selected, click “Quick-Create Queue.”
3. Repeat the above step b to create two more queues with names “Queue\_2” and “Queue\_3.” After creating, all these three SQS queues are listed in the SQS console page.

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**3) Subscribe the Queues to the Topic**

This step is necessary to subscribe to the newly created SQS queues to the Amazon SNS topic that will send out relevant SNS messages. For our example, we shall subscribe our three queues (Queue\_1, Queue\_2, and Queue\_3) to “Topic\_1” topic.

* From the available list of queues on the AWS SQS console, select the three queues and then click Queue Actions > “Subscribe Queues to SNS Topic.”
* From the “Choose a Topic” list in the “Subs
* cribe to a Topic” dialog box, select your listed SNS topic (Topic\_1) that was created by you.
* If you want to subscribe your queues to SQS queues created by an external user, use the “Topic ARN” field.
* Click Subscribe to subscribe the selected queues to the specific topic.

**4) Set Filter Policies to the SNS Subscriptions**

After creating your SNS topic and SQS queues, you now need to set filter policies for your SNS subscriptions. Created as a JSON doc, a filter policy defines the type of message notifications that would interest the subscriber. Subscriptions without any filter policies would receive all messages that are published to the SNS topic (in our example, Queue\_3 as it handles all requests).

* From the Amazon SNS console, click Topics, then select “Topic\_1” from the available list of topics.
* From the “Topic\_1” details page, you can now view all the SQS queues subscribed to this topic. Here is a sample screen.
* Select each queue, then click Edit to open the “Edit subscription” page where you can edit the filter policy for the queue.
* Use the JSON editor to enter the JSON code (example, “request\_type”:[“type 1”] for Queue\_1).
* After making the changes, save your changes.
* Repeat the above steps for each of the other two queues. For Queue\_3, you don’t need to enter any filter policy as it processes all event messages published to the topic.

**5) Publish Messages to the Topic**

The next step is to test the message filtering mechanism to see if it publishes the right messages to the subscribers.

a. From the “Topic\_1” details page in the Amazon SNS console, click “Publish a message.”

b. Enter the following message details in the “Publish message to topic” page. Here is a sample screen:

* Subject (optional): contains the message subject (for example, “Message#1”).
* Keep the “Identical payload for all delivery protocols” option selected.
* Message body: contains the body of the message to be sent to the endpoint.
* Message attributes: contains the parameters used in the message. For our example, Type as “String,” Name as “request\_type,” and Value as “type 1.”

c. Publish your first message.

d. Repeat the above steps to add two more messages (Message#2 and Message#3) with the same parameters as above. For both messages, specify the Value attribute as “type 2.”

**6) Verify Your Message Deliveries**

The next step is to verify if the new messages are routed to the correct SQS queue with the message filter policy.

* From the Amazon SQS console, select your queue followed by Queue Actions > View/Delete Messages.
* Click on “Start Polling for Messages” to start receiving the messages.
* Repeat the above steps for the remaining queues.

You will observe that Queue\_1 will receive only Message#1 – while Queue\_2 will receive both Message#2 and Message#3. At the same time, Queue\_3 will receive all three messages as it does not have any configured filter policy.