Amazon Simple Notification Service

amazon
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Amazon Simple Notification Service

Fully managed Push Notification Service

Send individual messages or fan-out messages to large number of recipients

Send push notifications to mobile devices

Deliver messages to Amazon Simple Queue Service (SQS), AWS Lambda, HTTP(S) endpoint, Email

Concepts

Topic – Logical Access Point and Communication Channel

Publisher – Sends message to a topic

Subscriber – Subscribes to a Topic using variety of supported protocols and receives messages

Figure - Components

Usage Scenarios

[Fanout](#) – broadcast a message to multiple consumers

Application & System Alerts – Alert about changes to your application or infrastructure

Push Email & Text Messaging – Transmit messages to individuals or groups via email and SMS

Mobile App Push Notification – Notify directly to your App users

Subscriber Protocols

- Email/Email-JSON – Send message as email

- SMS – Send message as text messages to phones

- HTTP(S) – Invoke specified HTTP Endpoint

- SQS – Send message to Queue

- Application – Push Notification to mobile devices and desktop

- AWS Lamdba – Invoke Lambda functions with message

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Tracking Delivery Status

- Track status of message delivery
- Access using CloudWatch Logs
- Track Success and Failures – Logged to separate Log Groups
- Sample Successful Deliveries. Example:
    - 100% - All successful deliveries are logged
    - 30% - Samples 30% of successful deliveries and so forth
- Enable for HTTP/Lambda/SQS/Application
- Enable for SMS

Message Reliability

- SNS messages are stored redundantly in multiple servers across multiple data centers

- HTTP Delivery – If endpoint is not available, SNS will attempt a retry based on configured delivery policies

  - Configure delay between retries

  - Number of retries

  - Back off function – linear, exponential, arithmetic, geometric

  - Define retry policy at Topic level or individual subscriber level

  - Maximum delivery rate - throttles delivery rate. messages can be held up to 1 hour and then discarded

Spam Protection

To protect against "Spam" notifications, subscribers have to confirm subscription

- HTTP/HTTPs – Call is made to endpoint with confirmation URL that needs to be visited

- Email/Email-JSON – Email sent with confirmation URL

- SQS notification – explained in later slide

SNS Message to Simple Queue Service

- SNS pushes time critical messages to multiple subscribers

- SQS requires consumers to poll for messages. Consumer may not be available all the time

- By combining SNS and SQS, you can handle:
    - Consumers who need immediate notification using push
    - Persist message in SQS for other application to process at a later time

- Only Standard Queue is supported at this time

Demo – Topic to Queue

- Create Topic
- Create SQS Queue
- Grant Permissions for SNS to Send message to SQS Queue
- Configure Queue as a subscriber for Topic
- Send Messages to Topic

Demo – Topic to Queue

- Subscribe for SNS notification directly from SQS Queue – simpler setup. Permissions are automatically configured.

Subscription Confirmation SQS

- If Queue and Topic are owned by the same account, subscriptions are automatically confirmed

- If Queue Owner subscribes for Topic belonging to a different Account

  - Topic Owner must grant Queue Owner permissions to subcribe

- If Topic Owner creates subscription to Queue belonging to a different owner

  - Queue Owner has to confirm the subscription

  - URL to confirm is send in the first message

Demo – Topic to Email Subscription

- Subscribe to Topic

- Use Email as protocol

- Specify email address at end point

- Confirm subscription

- Receive message

Sending SMS Messages

- Send SMS directly to a phone number

- Send SMS to multiple phone numbers by subscribing the phone numbers to a topic

- SMS Message Types

  - Promotional – Non-critical Optimized for cost (cheaper)

  - Transactional – Critical messages such as OTP – highest reliability (expensive)

- Set monthly spending limits – default USD 1 – Need to contact support to increase limit

- Reach recipients in over 200 countries

- Recipients can Opt-out

SNS Mobile Push Notifications

[Send notifications messages](#) directly to apps on mobile devices and desktops

Alerts, Badge update, Sound Alerts

Amazon Device Message (Fire OS), Apple Push NS (iOS and Mac OS X), Baidu Cloud Push, Google Cloud Messaging (Android), Microsoft Push NS (Windows Phone), Windows Push NS

Monitoring

[SNS Metrics](#)

Pricing

[SNS Pricing](#)

- Protocol

- Number of publishes

- Data Transfer