

Amazon Simple Services

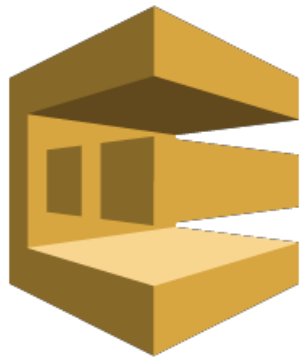


Simple Email Service (SES)



- Cost effective bulk email service
- Cost based on number of emails sent
- Outbound-only email-sending service
- Leverages Amazon email reputation
- Initially limited to 10,000 emails/day

Simple Queueing Service (SQS)



Amazon SQS

- Fast, reliable, and scalable
- Unlimited messages and queue size
- Payload up to 256KB
- Billed in chunks of 64KB payloads
- First 1 million requests are free
- \$0.50 / million SQS requests

Simple Notification Service (SNS)

Push messaging
service

HTTP/HTTPS

Email

Email-JSON

SMS

Amazon SQS
queues

Summary



Simple Email Service

Simple Queuing Service

Simple Notification Service

Using AWS Messaging Services

Outline

- **Using AWS Messaging Services for Notifications and Integration**
- **Features of Simple Queue Service (SQS)**
- **Acting on SQS Queues using the Management Console**
- **Acting on SQS Queues using the API**
- **AWS for .NET - Acting on SQS Queues**
- **Features of Simple Notification Services (SNS)**
- **Creating and Publishing to SNS Topics using the Management Console**
- **Creating and Publishing to SNS Topics using the API**
- **AWS for .NET - Creating and Publishing to SNS Topics**
- **Summary**

Using AWS Messaging Services for Notifications and Integration

- **Think of messaging as middleware options for sharing data between applications.**
- **The must-read book Enterprise Integration Patterns (2003, Hohpe, Woolf) describes messaging as:**
 - ▣ *Use Messaging to transfer packets of data frequently, immediately, reliably, and asynchronously, using customizable formats.*
- **AWS provides three services for messaging between AWS services, or ANY two applications.**
 - ▣ Simple Queue Service (SQS)
 - ▣ Simple Notification Service (SNS)
 - ▣ Simple Email Service (SES)

Features of Simple Queue Service (SQS)

- **SQS provides a highly available, scalable queue storage mechanism.**
- **Queues are great for moving data between applications without fear of losing it, or getting overwhelmed by variable load.**
- **Could use SQS for background work tasks, items for browsers to poll, and more.**
- **An individual queue is unlimited in size, but the individual text messages can only be 64kb.**
- **Considerations for this cloud-based queuing:**
 - ▣ Retrieved messages are “locked” while processing but locks expire
 - ▣ Queues or messages can be purposely delayed (hidden) for a time
 - ▣ Messages could be delivered more than once (“at least once delivery”)
 - ▣ No guarantee of first-in-first-out (FIFO)
 - ▣ Queue messages may be distributed across machines, so “sampling” occurs and a request MAY not return all the possible messages.

Acting on SQS Queues using the Management

Console

- Users of the AWS Management Console can create, configure and delete queues.
- Permissions (with conditions) can be added to queues.
- Messages can be sent, viewed and deleted from the Console.

AWS Management Console **Amazon SQS** Richard

[AWS Elastic Beanstalk](#) [Amazon S3](#) [Amazon EC2](#) [Amazon VPC](#) [Amazon CloudWatch](#) [Amazon Elastic MapReduce](#) [Amazon CloudFront](#) [AWS CloudFormation](#) [Amazon RDS](#) [Amazon ElastiCache](#) [Amazon SQS](#)

Queues

Region: **US East (Virginia)** [Create New Queue](#) Queue Actions Show

Filter by Prefix:

	Name	Messages Available	Messages in Flight	Created
<input checked="" type="checkbox"/>	SeroterSampleQueue	0	0	2012-02-12 13:40

1 SQS Queue selected.

Details **Permissions**

Name: SeroterSampleQueue **Default Visibility Timeout:**

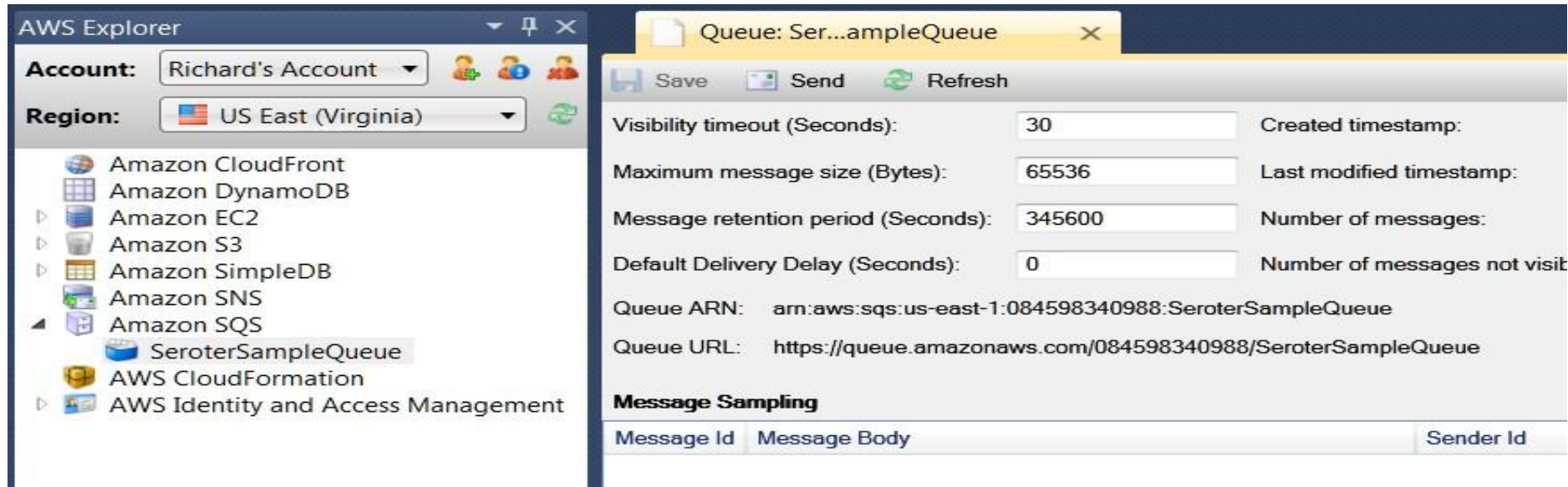
URL: <https://queue.amazonaws.com/084598340988/SeroterSampleQueue> **Message Retention Period:**

Acting on SQS Queues using the API

- **API is Query based, as SOAP support ended in 2011**
- **The available SQS operations center around sending messages, receiving messages and deleting messages.**
- **API users can:**
 - ▣ CreateQueue which creates a new queue with particular attributes.
 - ▣ AddPermission assigns a permission to a particular principal
 - ▣ SetQueueAttribute gives you the ability to set queue values like VisibilityTimeout, Policy, MessageRetentionPeriod and more.
 - ▣ SendMessage sends an individual message to a queue.
 - ▣ SendMessageBatch lets you send up to 10 messages at once to a queue
 - ▣ ReceiveMessage pulls back up to 10 messages that were returned from the queue sampling operation.
 - ▣ DeleteMessage deletes the message with the given receipt handle (acquired when receiving a message)

AWS for .NET - Acting on SQS Queues

- **The AWS Explorer is a full-featured tool for managing queues and interacting with queue messages.**
 - ▣ Users can create queues, send messages, receive messages and more.
- **The .NET API includes all of the objects needed to work with SQS solutions.**



Features of Simple Notification Services (SNS)

- **SNS is a push-based message broadcasting service**
- **Could use this for application integration, time-sensitive information updates, or mobile app updates.**
- **Subscribers must “opt in” for each subscription.**
- **Create “topics” that can be subscribed to by various endpoints.**
 - ▣ HTTP
 - ▣ HTTPS
 - ▣ SMTP (text or JSON)
 - ▣ SMS
 - ▣ SQS
- **A particular topic has a policy attached which controls access rights and supported protocols.**
- **Subscribers receive a single message at a time, but must be aware that they could be out of order, or delivered more than once.**

Creating and Publishing to SNS Topics using the Management Console

- Users of the Management Console can create and secure new topics, add subscriptions and monitor the status of subscriptions.
- Like the other service consoles, the SNS console allows users to interact with the service by publishing messages to a topic.

AWS Management Console **Amazon SNS** Richard L Seroter | Help

Navigation

Region: US East (Virginia)

Create New Topic

SNS Dashboard

My Subscriptions

Dashboard

Getting Started

Amazon Simple Notification Service (Amazon SNS) is a web service that makes it easy to set up, operate, and send notifications in the cloud ([more details](#)). To start using Amazon SNS, create a topic. Topics allow you to publish notifications to subscribers.

To get started using Amazon SNS, create a new topic.

Create New Topic

Your topic will be created in the US East (Virginia) region.

Service Health

Current Status	Details
 Amazon SNS (US East - N. Virginia)	Service is operating normally

[View complete service health details](#)

My Resources

You are using the following Amazon SNS resources in the US East (Virginia) region:

Topics:	0
Subscriptions:	0
Pending:	0
Confirmed:	0
Deleted:	0

Additional Actions

Create New Subscription

Publish to a Topic

[View Amazon SNS Documentation](#)

Creating and Publishing to SNS Topics using

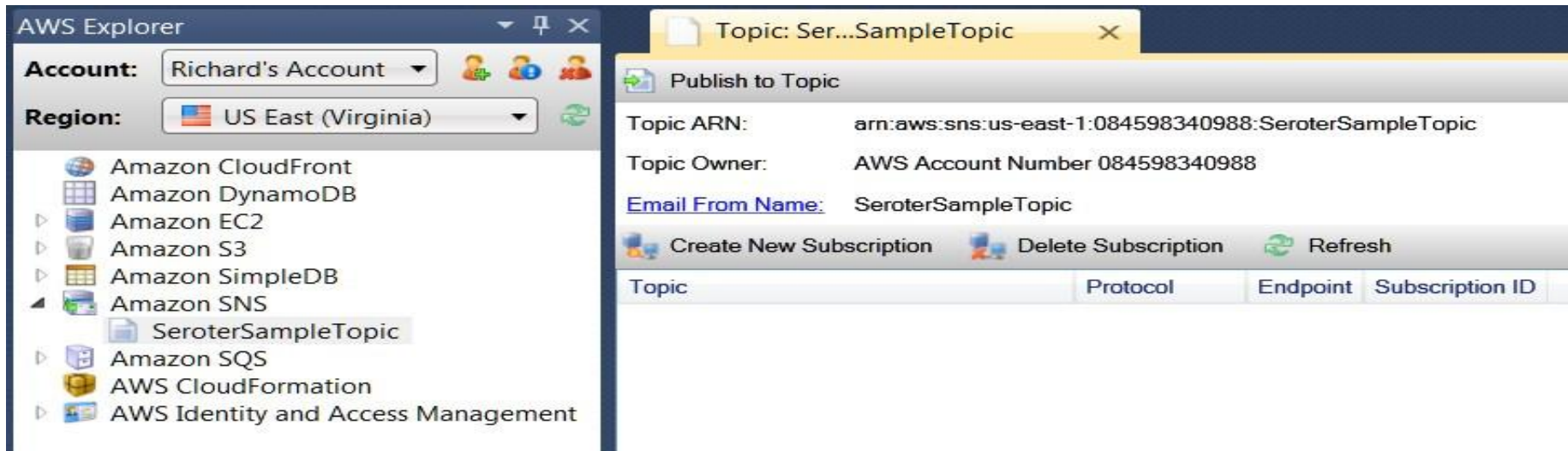
the API

- **SNS is relatively weakly documented and is still considered a beta product.**
- **The API is fairly straightforward and contains operations to:**
 - ▣ CreateTopic which creates a new topic with the given name.
 - ▣ AddPermission sets the topic's access control policy.
 - ▣ ListSubscriptions returns all the subscriptions for the caller.
 - ▣ ListSubscriptionsByTopic returns all the the subscriptions for the given topic.
 - ▣ Subscribe initiates the subscription by sending a confirmation message to the endpoint.
 - ▣ ConfirmSubscription is used to verify the consent of the subscriber.
 - ▣ Publish sends a subject and message body to all subscribers of a topic.

AWS for .NET - Creating and Publishing to SNS

Topics

- The AWS Explorer lets developers create/delete topics, set security policies, add subscriptions and publish messages.
- The .NET API contains all of the structured objects you need to interact with the topics and messages that make up an SNS solution.



Summary

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