

Configuring SQS Queue for S3 Event

Lets first create **s3-sqs-example** bucket

```
INBL2-42RG3QD:~ mahtab.alam$ aws s3 mb s3://s3-sqs-example --region us-east-1 --profile mahtab-sysops
make_bucket: s3-sqs-example
INBL2-42RG3QD:~ mahtab.alam$
```

Next lets create SQS queue **sample-queue**

```
INBL2-42RG3QD:~ mahtab.alam$ aws sqs create-queue --queue-name sample-queue --region us-east-1 --profile mahtab-sysops
{
  "QueueUrl": "https://queue.amazonaws.com/472821263165/sample-queue"
}
INBL2-42RG3QD:~ mahtab.alam$
INBL2-42RG3QD:~ mahtab.alam$
```

Next lets add the event configuration so that whenever a new file is added to **s3-sqs-example** bucket, the bucket will publish notification to **sample-queue**

Tags

Transfer acceleration

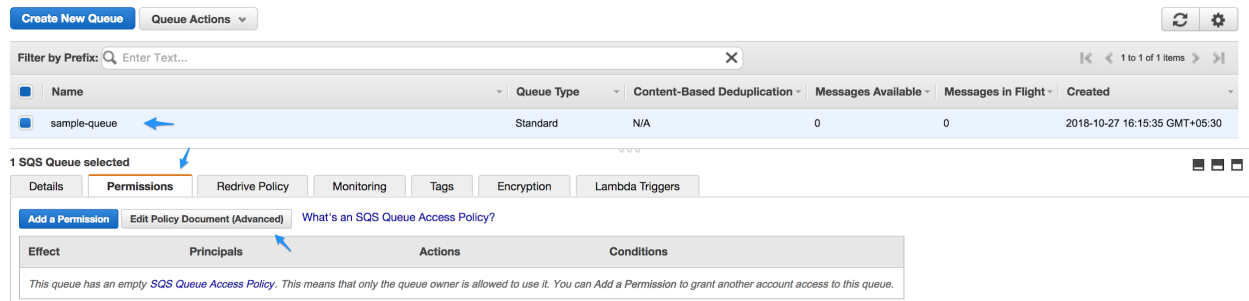
Events

Requester pays

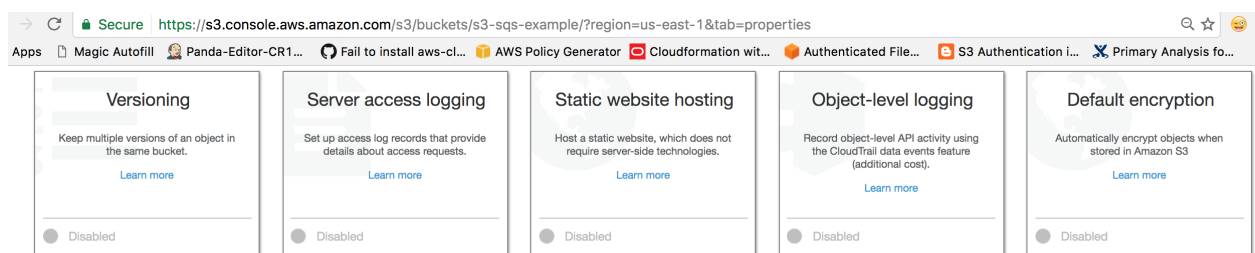
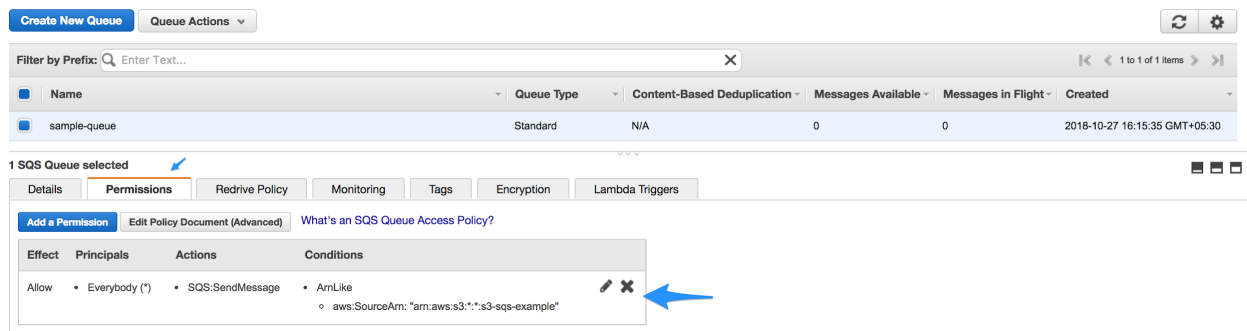
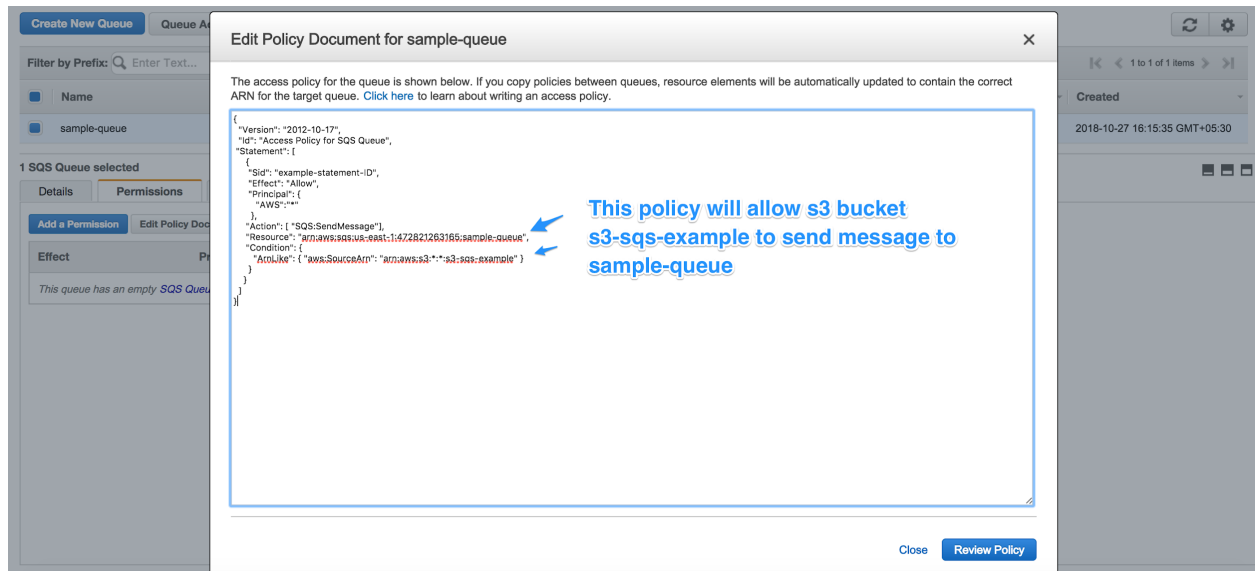
Note that S3 bucket don't have permission to publish notifications to the sample-queue

Unable to validate the following destination configurations. Permissions on the destination queue do not allow S3 to publish notifications from this bucket. (arn:aws:sqs:us-east-1:472821263165:sample-queue)

So let's first add the policy to SQS queue, so that it will allow S3 bucket s3-sqs-example to send message to sample-queue.

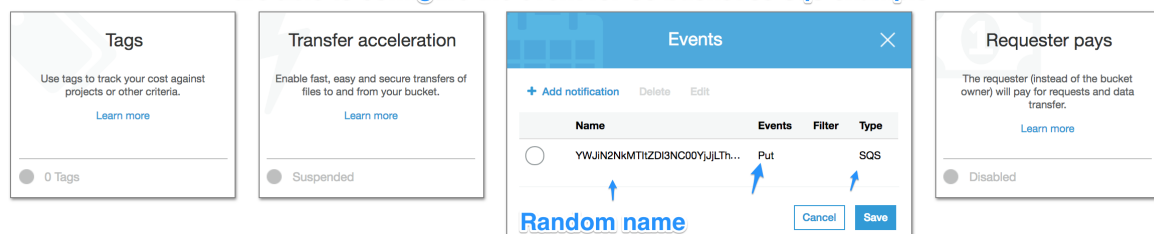


```
{
  "Version": "2012-10-17",
  "Id": "example-ID",
  "Statement": [
    {
      "Sid": "example-statement-ID",
      "Effect": "Allow",
      "Principal": {
        "AWS": "*"
      },
      "Action": [
        "SQS:SendMessage"
      ],
      "Resource": "SQS-queue-ARN",
      "Condition": {
        "ArnLike": { "aws:SourceArn": "arn:aws:s3:*:*:bucket-name" }
      }
    }
  ]
}
```



Advanced settings

Note that after adding the appropriate access policy to SQS queue sample-queue we are able to configure the event for S3 bucket s3-sqs-example



Create New Queue Queue Actions

Filter by Prefix: Enter Text...

Name	Queue Type	Content-Based Deduplication	Messages Available	Messages in Flight	Created
sample-queue	Standard	N/A	1	0	2018-10-27 16:15:35 GMT+05:30

1 SQS Queue selected

Details Permissions Redrive Policy Monitoring Tags Encryption Lambda Triggers

Name: sample-queue
 URL: https://sqs.us-east-1.amazonaws.com/472821263165/sample-queue
 ARN: arn:aws:sqs:us-east-1:472821263165:sample-queue
 Created: 2018-10-27 16:15:35 GMT+05:30
 Last Updated: 2018-10-27 16:30:32 GMT+05:30
 Delivery Delay: 0 seconds
 Queue Type: Standard
 Content-Based Deduplication: N/A

Default Visibility Timeout: 30 seconds
 Message Retention Period: 4 days
 Maximum Message Size: 256 KB
 Receive Message Wait Time: 0 seconds
 Messages Available (Visible): 1
 Messages in Flight (Not Visible): 0
 Messages Delayed: 0

Note that after adding the event configuration 1 message is available in queue, as S3 send TestEvent

EXPLORER

JS main.js

```

1 // Load the AWS SDK for Node.js
2 var AWS = require('aws-sdk');
3 // Set the region
4 var aws_region = process.env.REGION;
5
6 AWS.config.update({region: aws_region});
7
8 // Create an SQS service object
9 var sqs = new AWS.SQS({apiVersion: '2012-11-05'});
10
11 var queueURL = "https://sqs.us-east-1.amazonaws.com/472821263165/sample-queue";
12
13 var params = {
14   AttributeNames: [
15     "SentTimestamp"
16   ],
17   MaxNumberOfMessages: 10,
18   MessageAttributeNames: [
19     "All"
20   ],
21   QueueUrl: queueURL,
22   VisibilityTimeout: 10,
23   WaitTimeSeconds: 0
24 };
25
26 sqs.receiveMessage(params, function(err, data) {
27   if (err) {
28     console.log("Receive Error", err);
29   } else if (data.Messages) {
30     console.log('Messages ' + JSON.stringify(data.Messages));
31     var deleteParams = {
32       QueueUrl: queueURL,
33       ReceiptHandle: data.Messages[0].ReceiptHandle
34     };
35     // sqs.deleteMessage(deleteParams, function(err, data) {
36     //   if (err) {
37     //     console.log("Delete Error", err);
38     //   } else {
39     //     console.log("Message Deleted", data);
40     //   }
41     // });
42   }
43 });

```

Note that we are not deleting the message after receiving the message from queue, so that it will not be deleted from the queue

Lets execute this node.js program and receive the message in SQS queue

```
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ AWS_PROFILE=mahtab-sysops REGION=us-east-1 node main.js
Messages [{"MessageId": "21b86fdb-f709-4bf2-bc6d-6c10b860eaa9", "ReceiptHandle": "AQEB436an0j8Re0+bEVvJHyXQIB+7nv7uPRV72EmCOMANvEEpE/SY8/Ml+8dGxkqQBT5VcjANvgOCQF9ZuhYznwK6G2QcaIsT2znyLRyvjh4PpPg+PpnD0epIfk4SfMd3veJFtekv5SWr82i9H5ja5qjDB01m5VVra705sxeLzJcRmRn7zb7lMI0ehbzLAz4VcqAQbdHZnDx8bTsdX0l07Kd0e+8MTS2P5R/BiZ0K+ZRxWj1/I1BmN/RMDKd4G1f1RvXXz+WkjH6muGQ/fLDU7qYjq5BsXgiFCy/lRzkvi4Mkrq34SHCQbOrJOv4t4mBwRqyXpyjMtk34E0lW3yfVGDw6ihA62sXzs0mQ5HDDtPIehF0wa0r37TYIuaZWCCr", "MD5OfBody": "c4df507c493397b1799b98bba91eb16b", "Body": "{\"Service\": \"Amazon S3\", \"Event\": \"s3:TestEvent\", \"Time\": \"2018-10-27T11:01:18.949Z\", \"Bucket\": \"s3-sqs-example\", \"RequestId\": \"A9E8A94BD5108243\", \"HostId\": \"qTimx5wk3w8MjmcS6e0Aat46DVhU0jnc0vsDQa+bMgwpkoF1voY7I0tpiH2KvI1VPxRP/Ki1BY Y=\\\"}\\\", \"Attributes\": {\"SentTimestamp\": \"1540638079023\"}}"}]
INBL2-42RG3QD:node-sqs-demo mahtab.alam$
```

Lets delete this S3 test event from queue by purging the queue

```
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ aws sqs purge-queue --queue-url https://sqs.us-east-1.amazonaws.com/472821263165/sample-queue --profile mahtab-sysops
INBL2-42RG3QD:node-sqs-demo mahtab.alam$
```

Filter by Prefix:

Name	Queue Type	Content-Based Deduplication	Messages Available	Messages in Flight	Created
sample-queue	Standard	N/A	0	0	2018-10-27 16:15:35 GMT+05:30

Note that after purging the queue there are no messages in the queue

1 SQS Queue selected

Details Permissions Redrive Policy Monitoring Tags Encryption Lambda Triggers

Name: sample-queue
URL: https://sqs.us-east-1.amazonaws.com/472821263165/sample-queue
ARN: arn:aws:sqs:us-east-1:472821263165:sample-queue
Created: 2018-10-27 16:15:35 GMT+05:30
Last Updated: 2018-10-27 16:41:52 GMT+05:30
Delivery Delay: 0 seconds
Queue Type: Standard
Content-Based Deduplication: N/A

Default Visibility Timeout: 30 seconds
Message Retention Period: 4 days
Maximum Message Size: 256 KB
Receive Message Wait Time: 0 seconds
Messages Available (Visible): 0
Messages in Flight (Not Visible): 0
Messages Delayed: 0

Next lets put an object in S3 bucket s3-sqs-example, that will put an event message for that object in the SQS queue sample-queue

```
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ ls -lh ~/Downloads/cat3.jpeg
-rw-r--r--@ 1 mahtab.alam 26352421 331K Oct 25 22:54 /Users/mahtab.alam/Downloads/cat3.jpeg
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ aws s3 cp ~/Downloads/cat3.jpeg s3://s3-sqs-example/ --profile mahtab-sysops
upload: ./Downloads/cat3.jpeg to s3://s3-sqs-example/cat3.jpeg
INBL2-42RG3QD:node-sqs-demo mahtab.alam$
```

We copied a 331KB object to S3 bucket

Filter by Prefix:

Name	Queue Type	Content-Based Deduplication	Messages Available	Messages in Flight	Created
sample-queue	Standard	N/A	1	0	2018-10-27 16:15:35 GMT+05:30

Note that now we have a message available in the queue after putting an object to S3 bucket

1 SQS Queue selected

Details Permissions Redrive Policy Monitoring Tags Encryption Lambda Triggers

Name: sample-queue
URL: https://sqs.us-east-1.amazonaws.com/472821263165/sample-queue
ARN: arn:aws:sqs:us-east-1:472821263165:sample-queue
Created: 2018-10-27 16:15:35 GMT+05:30
Last Updated: 2018-10-27 16:41:52 GMT+05:30
Delivery Delay: 0 seconds
Queue Type: Standard
Content-Based Deduplication: N/A

Default Visibility Timeout: 30 seconds
Message Retention Period: 4 days
Maximum Message Size: 256 KB
Receive Message Wait Time: 0 seconds
Messages Available (Visible): 1
Messages in Flight (Not Visible): 0
Messages Delayed: 0

Lets read this message from SQS queue

```
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ AWS_PROFILE=mahtab-sysops REGION=us-east-1 node main.js
Messages [{"MessageId":"9bdc8a66-8365-4fe6-889c-a055b77c449f","ReceiptHandle":"AQEBhruW84Vdn0NUj5c0N9PqdYDAxzqqx87tP+x6/F2Ch117Wt5Gj2ypJx1T2ckf
prDk+35FX8ZvNpp0rX20zqhDqSn0z3zGOVX7zIkW6zzn+fEfBc0LU/RALTqfYQwAZtvvbsPTKRyRgn2U3BRdLpbZ1/oYdiWyujuvEX58XNvpFAFvbyU9DGXFaPp2N0XDmn6t9tMcE9nEMn/
zCx7c7q6pFN/Q3tIdyKu/NSvtEJpJy00P5MWhqw53Q0DR/U30dDY9ad01h6ag+Qq1bgBE+30iUuIu/VLuqjdLvNP1bk8BrKP59xAfIM1e9PA0uCeA7KYQsd6jccCQ60jD999galca7j0TQNa
soIkAveXBRjAHXkjiqjXK/X168Jr0LbdfAhy9","MD5OfBody":"36b48c10d3de15f8dfb8144572b7b3bc","Body":{"Records":[{"eventVersion":"2.0","eventS
ource":{"aws:s3","awsRegion":"us-east-1","eventTime":"2018-10-27T11:16:29.100Z","eventName":"ObjectCreated:Put","userIdentity":{"principalId":"AWS:AIDA17E47VP7UTW3B5SVK"},"requestParameters":{"sourceIPAddress":"106.51.26.233"},"responseElements":{"x-amz-req
uest-id":"6A2A42755834B1D9"},"x-amz-id-2":"gk8zgqZjnxQHGvJErBPLz19ZT90Ukuo0spqGxg/WA8IHFx1C6sG+G6qLgzetEta89qt8L1KJpE"},"s3":{"s3Sch
emaVersion":"1.0","configurationId":"YWJiN2NkMTIzDI3NC00YjJjLTkkyY2YtNWMyNmUzZDExOTA0","bucket":{"name":"s3-sqs-example","ownerId
entity":{"principalId":"A38LJ0D4QVKVQT"},"arn":"arn:aws:s3::s3-sqs-example"},"object":{"key":"cat3.jpeg","size":339371,"eTag
":"7080bcdbead0d6ea823b9393721d0de3"},"sequencer":"0058D44908366305B9"}}]}","Attributes":{"SentTimestamp":"1540638989165"}}]
INBL2-42RG3QD:node-sqs-demo mahtab.alam$
```

Filter by Prefix: Enter Text...					
☒ Name	Queue Type	Content-Based Deduplication	Messages Available	Messages in Flight	Created
☒ sample-queue	Standard	N/A	0	1	2018-10-27 16:15:35 GMT+05:30

Note that as we receive the message from queue it is marked in Flight message and will not be available to other consumers until visibility timeout period

1 SQS Queue selected					
Details	Permissions	Redrive Policy	Monitoring	Tags	Lambda Triggers
Name: sample-queue URL: https://sqs.us-east-1.amazonaws.com/472821263165/sample-queue ARN: arn:aws:sqs:us-east-1:472821263165:sample-queue Created: 2018-10-27 16:15:35 GMT+05:30 Last Updated: 2018-10-27 16:41:52 GMT+05:30 Delivery Delay: 0 seconds Queue Type: Standard Content-Based Deduplication: N/A			Default Visibility Timeout: 30 seconds Message Retention Period: 4 days Maximum Message Size: 256 KB Receive Message Wait Time: 0 seconds Messages Available (Visible): 0 Messages in Flight (Not Visible): 1 Messages Delayed: 0		

Filter by Prefix: Enter Text...					
☒ Name	Queue Type	Content-Based Deduplication	Messages Available	Messages in Flight	Created
☒ sample-queue	Standard	N/A	1	0	2018-10-27 16:15:35 GMT+05:30

After visibility timeout period the message is again available for other consumers as we didn't delete the message after processing

1 SQS Queue selected					
Details	Permissions	Redrive Policy	Monitoring	Tags	Lambda Triggers
Name: sample-queue URL: https://sqs.us-east-1.amazonaws.com/472821263165/sample-queue ARN: arn:aws:sqs:us-east-1:472821263165:sample-queue Created: 2018-10-27 16:15:35 GMT+05:30 Last Updated: 2018-10-27 16:41:52 GMT+05:30 Delivery Delay: 0 seconds Queue Type: Standard Content-Based Deduplication: N/A			Default Visibility Timeout: 30 seconds Message Retention Period: 4 days Maximum Message Size: 256 KB Receive Message Wait Time: 0 seconds Messages Available (Visible): 1 Messages in Flight (Not Visible): 0 Messages Delayed: 0		

```
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ date
Sat Oct 27 16:57:29 IST 2018
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ AWS_PROFILE=mahtab-sysops REGION=us-east-1 node main.js
Messages [{"MessageId":"9bdc8a66-8365-4fe6-889c-a055b77c449f","ReceiptHandle":"AQEB53E741vWUq1mm5x2p1s6KyPy84AKDxZy+N8gCmtahL/a7qzk7iNsgIkukMksiguIU
0RvsjtGtVtEuss0Ebt0tGynX8f5SH2j/rj6jg90XNXLgtQxLb8X/2zhptBnrgeff3YmH7/qHcXd278zkEXFH1AVFG7qC0Z46yIFRI/EU/1xkkIz8HyIids3reFZXWqJianfLRohaPS++MbMfIz2
Pyk7PNU2uCu2YewHBetwutUCEU7VBzylh2eC6eusrmHkRyz+i3hNseQ7V+iVTSrfQo1gceNF6/XhTHSntTWB6gAjB5xTYzjPaWuUES+tkh2I09U141jB7ysKDKRbnxwG7dhlSb5N4NPfLxkGKYe/
00VodKrIouKtBgTtU3Bb","MD5OfBody":"36b48c10d3de15f8dfb8144572b7b3bc","Body":"({\"Records\": [{\"eventVersion\":\"2.0\",\"eventSource\":\"aws:s3\",\"aws
Region\":\"us-east-1\",\"eventTime\":\"2018-10-27T11:16:29.100Z\",\"eventName\":\"ObjectCreated:Put\",\"userIdentity\":{\"principalId\":\"AWS:AIDA17E
47VP7UTW3BS5VK\"}),\"requestParameters\":{\"sourceIPAddress\":\"106.51.26.233\"},\"responseElements\":{\"x-amz-request-id\":\"6A2A42755834B1D9\",\"x-a
mz-id-2\":\"gk8zqgZjnxQHGvJErBPLz19ZT90UKuopDspqGxg/WA81HFx1C6sG+G6qLgzEtB9qtBL1KJpE=\",\"s3\":{\"s3SchemaVersion\":\"1.0\",\"configurationId\":\"
YwJ1N2NkMTiZDI3NC00YjJlThKy2YtNMW2NmUZZDEX0TA0\",\"bucket\":{\"name\":\"s3-sqs-example\",\"ownerIdentity\":{\"principalId\":\"A38LJ0D4QVKVQT\"},\"
arn\":\"arn:aws:s3:::s3-sqs-example\"},\"object\":{\"key\":\"cat3.jpeg\",\"size\":339371,\"eTag\":\"7080bcbde9d6ea823b9393721d0de3\",\"sequencer\":
\"005BD44908366305B9\"}}}],\"Attributes\":{\"SentTimestamp\":\"1540638989165\"}}]}]
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ AWS_PROFILE=mahtab-sysops REGION=us-east-1 node main.js
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ date
Sat Oct 27 16:57:38 IST 2018
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ AWS_PROFILE=mahtab-sysops REGION=us-east-1 node main.js
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ date
Sat Oct 27 16:57:42 IST 2018
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ AWS_PROFILE=mahtab-sysops REGION=us-east-1 node main.js
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ date
Sat Oct 27 16:57:51 IST 2018
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ date
Sat Oct 27 16:57:52 IST 2018
INBL2-42RG3QD:node-sqs-demo mahtab.alam$ AWS_PROFILE=mahtab-sysops REGION=us-east-1 node main.js
Messages [{"MessageId":"9bdc8a66-8365-4fe6-889c-a055b77c449f","ReceiptHandle":"AQEBraqe602/AC/hzpGTM29yR/hWsoWRZc9+PDNisZfTenDZW/oz6G7dXDRyNurhtVt0zn
1VH51mut15E3n3rXx5QEYz1PDA/NfhFvg/Hyrz27o2vCqF15CrzHYNT5Y1gZVadhF8IZB99tFW414ywpdygg0AJsL+AaoZKu3vZEZEURtUn09JL26IwmXERn87Cjclpn0dgFGNB04Tyq66o5ypN
barA8GT6mdc2HGq4rUdyaKfb1uD1ai6VHX4Jj7n7nwnGbfADDN03RwNj5oIJeI5UnfGPYkqomcRfLpDpMtsXD5UcRnwMTtGx1x1eVU1YKtN+Jw+PQ9yUXPLGAMZkoAVJnYekKCAMINIxf3qyh8
2QospSrUcC899id1mmK9","MD5OfBody":"36b48c10d3de15f8dfb8144572b7b3bc","Body":"({\"Records\": [{\"eventVersion\":\"2.0\",\"eventSource\":\"aws:s3\",\"aws
Region\":\"us-east-1\",\"eventTime\":\"2018-10-27T11:16:29.100Z\",\"eventName\":\"ObjectCreated:Put\",\"userIdentity\":{\"principalId\":\"AWS:AIDA17E
47VP7UTW3BS5VK\"}),\"requestParameters\":{\"sourceIPAddress\":\"106.51.26.233\"},\"responseElements\":{\"x-amz-request-id\":\"6A2A42755834B1D9\",\"x-a
mz-id-2\":\"gk8zqgZjnxQHGvJErBPLz19ZT90UKuopDspqGxg/WA81HFx1C6sG+G6qLgzEtB9qtBL1KJpE=\",\"s3\":{\"s3SchemaVersion\":\"1.0\",\"configurationId\":\"
YwJ1N2NkMTiZDI3NC00YjJlThKy2YtNMW2NmUZZDEX0TA0\",\"bucket\":{\"name\":\"s3-sqs-example\",\"ownerIdentity\":{\"principalId\":\"A38LJ0D4QVKVQT\"},\"
arn\":\"arn:aws:s3:::s3-sqs-example\"},\"object\":{\"key\":\"cat3.jpeg\",\"size\":339371,\"eTag\":\"7080bcbde9d6ea823b9393721d0de3\",\"sequencer\":
\"005BD44908366305B9\"}}}],\"Attributes\":{\"SentTimestamp\":\"1540638989165\"}}]}]
INBL2-42RG3QD:node-sqs-demo mahtab.alam$
```

No message as there was no message available in queue

This proves that an in-flight message is not available to consumers until Visibility Timeout period

One important thing to note about VisibilityTimeout period is it can be specified with individual receiveMessage request, and if not specified with the receiveMessage request it will be by default to SQS queue's default VisibilityTimeout period

VisibilityTimeout — (Integer)

The duration (in seconds) that the received messages are hidden from subsequent retrieve requests after being retrieved by a **ReceiveMessage** request.

```

JS main.js  x
1  // Load the AWS SDK for Node.js
2  var AWS = require('aws-sdk');
3  // Set the region
4  var aws_region = process.env.REGION;
5
6  AWS.config.update({region: aws_region});
7
8  // Create an SQS service object
9  var sqs = new AWS.SQS({apiVersion: '2012-11-05'});
10
11  var queueURL = "https://sqs.us-east-1.amazonaws.com/472821263165/sample-queue";
12
13  var params = {
14    AttributeNames: [
15      "SentTimestamp"
16    ],
17    MaxNumberOfMessages: 10,
18    MessageAttributeNames: [
19      "All"
20    ],
21    QueueUrl: queueURL,
22    VisibilityTimeout: 12,
23    WaitTimeSeconds: 0
24  };
25
26  sqs.receiveMessage(params, function(err, data) {
27    if (err) {
28      console.log("Receive Error", err);
29    } else if (data.Messages) {
30      console.log('Messages ' +JSON.stringify(data.Messages));
31      var deleteParams = {
32        QueueUrl: queueURL,
33        ReceiptHandle: data.Messages[0].ReceiptHandle
34      };
35      // sqs.deleteMessage(deleteParams, function(err, data) {
36      //   if (err) {
37      //     console.log("Delete Error", err);
38      //   } else {
39      //     console.log("Message Deleted", data);
40      //   }
41      // });
42    }
43  });

```

Here we are specifying to set the VisibilityTimeout period for message to 12 seconds with receiveMessage request