Training manual

Colchester Short Track Rekognition Software

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# Getting Started with Rekognition

## Setup an AWS Account

* Setup an AWS account at this link: <https://portal.aws.amazon.com/billing/signup#/start>

## Create IAM user then sign in

* Create an IAM user then sign in to the console as the IAM user. Create an IAM user with administrator permissions in your AWS account. For instructions, click this link: <https://docs.aws.amazon.com/IAM/latest/UserGuide/getting-started_create-admin-group.html>
* Next, as the IAM user, sign in to the AWS Management Console by using a special URL.

(Source - <https://docs.aws.amazon.com/rekognition/latest/dg/setting-up.html>)

## Setup AWS CLI and SDKs

* Download and install the CLI from this link: <https://aws.amazon.com/cli/>
* Download the SDK you intend to use from this link: <https://aws.amazon.com/tools/>
* Create an access key for the user you created in [Create an IAM user](https://docs.aws.amazon.com/rekognition/latest/dg/setting-up.html#setting-up-iam).
  + Sign in to the AWS Management Console and open the IAM console at <https://console.aws.amazon.com/iam/>
  + In the navigation pane, choose **Users**.
  + Choose the name of the user you created in [Create an IAM user](https://docs.aws.amazon.com/rekognition/latest/dg/setting-up.html#setting-up-iam).
  + Choose the **Security credentials** tab.
  + Choose **Create access key**. Then choose **Download .csv file** to save the access key ID and secret access key to a CSV file on your computer. Store the file in a secure location. You will not have access to the secret access key again after this dialog box closes. After you have downloaded the CSV file, choose **Close**.
* If you have installed the AWS CLI, you can [configure the credentials and region for most AWS SDKs by entering aws configure at the command prompt](https://docs.aws.amazon.com/cli/latest/userguide/cli-configure-quickstart.html), otherwise, click the following link for further instructions: <https://docs.aws.amazon.com/rekognition/latest/dg/setup-awscli-sdk.html>

 (Source - https://docs.aws.amazon.com/rekognition/latest/dg/setup-awscli-sdk.html)

# Configuring Rekognition Video

To use the Amazon Rekognition Video API with stored videos, you have to configure the IAM user and an IAM service role to access your Amazon SNS topics. You also have to subscribe an Amazon SQS queue to your Amazon SNS topics.

* Set up an AWS account to access Amazon Rekognition Video. For more information, see [Step 1: Set up an AWS account and create an IAM user](https://docs.aws.amazon.com/rekognition/latest/dg/setting-up.html).  
  Ensure the user has at least the following permissions:
  + AmazonSQSFullAccess
  + AmazonRekognitionFullAccess
  + AmazonS3FullAccess
  + AmazonSNSFullAccess
* Install and configure the required AWS SDK. For more information, see [Step 2: Set up the AWS CLI and AWS SDKs](https://docs.aws.amazon.com/rekognition/latest/dg/setup-awscli-sdk.html).
* [Create an Amazon SNS topic](https://docs.aws.amazon.com/sns/latest/dg/CreateTopic.html) by using the [Amazon SNS console](https://console.aws.amazon.com/sns/v2/home). Prepend the topic name with *AmazonRekognition*. Note the topic Amazon Resource Name (ARN). Ensure the topic is in the same region as the AWS endpoint that you are using.
* [Create an Amazon SQS standard queue](https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-create-queue.html) by using the [Amazon SQS console](https://console.aws.amazon.com/sqs/). Note the queue ARN.
* [Subscribe the queue to the topic](https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-subscribe-queue-sns-topic.html) you created in step 3.
* [Give permission to the Amazon SNS topic to send messages to the Amazon SQS queue](https://docs.aws.amazon.com/sns/latest/dg/SendMessageToSQS.html#SendMessageToSQS.sqs.permissions).
* Create an IAM service role to give Amazon Rekognition Video access to your Amazon SNS topics. Note the Amazon Resource Name (ARN) of the service role. For more information, see [Giving access to multiple Amazon SNS topics](https://docs.aws.amazon.com/rekognition/latest/dg/api-video-roles.html#api-video-roles-all-topics).
* [Add the following inline policy](https://docs.aws.amazon.com/IAM/latest/UserGuide/access_policies_manage-attach-detach.html#embed-inline-policy-console) to the IAM user that you created in step 1:

{

    "Version": "2012-10-17",

    "Statement": [

        {

            "Sid": "MySid",

            "Effect": "Allow",

            "Action": "iam:PassRole",

            "Resource": "arn:Service role ARN from step 7"

        }

    ]

}

          Give the inline policy a name of your choosing.

* You can now run the examples in [Analyzing a video stored in an Amazon S3 bucket with Java or Python (SDK)](https://docs.aws.amazon.com/rekognition/latest/dg/video-analyzing-with-sqs.html) and [Analyzing a video with the AWS Command Line Interface](https://docs.aws.amazon.com/rekognition/latest/dg/video-cli-commands.html).

(Source - <https://docs.aws.amazon.com/rekognition/latest/dg/api-video-roles.html>)

# Setup your Amazon S3 bucket

**To create a bucket**

* Sign into the AWS Management Console and open the Amazon S3 console at <https://console.aws.amazon.com/s3/>
* Choose **Create bucket**.
  + The **Create bucket** page opens.
* In **Bucket name**, enter a DNS-compliant name for your bucket.
  + The bucket name must:
    - Be unique across all of Amazon S3.
    - Be between 3 and 63 characters long.
    - Not contain uppercase characters.
    - Start with a lowercase letter or number.
  + After you create the bucket, you can't change its name. For information about naming buckets, see [Bucket naming rules](https://docs.aws.amazon.com/AmazonS3/latest/userguide/bucketnamingrules.html).
* In **Region**, choose the AWS Region where you want the bucket to reside.
  + Choose a Region that is close to you geographically to minimize latency and costs and to address regulatory requirements. Objects stored in a Region never leave that Region unless you explicitly transfer them to another Region. For a list of Amazon S3 AWS Regions, see [AWS Service Endpoints](https://docs.aws.amazon.com/general/latest/gr/rande.html#s3_region) in the Amazon Web Services General Reference.
* Keep the remaining settings set to the defaults. For more information on additional bucket settings, see [Creating a bucket](https://docs.aws.amazon.com/AmazonS3/latest/userguide/create-bucket-overview.html).
* Choose **Create bucket**.

(Source - <https://docs.aws.amazon.com/AmazonS3/latest/userguide/creating-bucket.html>)

## Upload an object to your bucket

**After creating a bucket in Amazon S3, you're ready to upload an object to the bucket. An object can be any kind of file: a text file, a photo, a video, and so on.**

* Open the Amazon S3 console at <https://console.aws.amazon.com/s3/>
* In the **Buckets** list, choose the name of the bucket that you want to upload your object to.
* On the **Objects** tab for your bucket, choose **Upload**.
* Under **Files and folders**, choose **Add files**.
* Choose a file to upload, and then choose **Open.**
* Choose **Upload**.

(Source - <https://docs.aws.amazon.com/AmazonS3/latest/userguide/uploading-an-object-bucket.html>)

## Download an object

**To download an object from an S3 bucket**

* Sign in to the AWS Management Console and open the Amazon S3 console at <https://console.aws.amazon.com/s3/>
* In the **Buckets** list, choose the name of the bucket that you want to download an object from.
* You can download an object from an S3 bucket in any of the following ways:
  + Choose the name of the object that you want to download.
  + On the **Overview** page, select the object and from the **Actions** menu choose **Download** or **Download as** if you want to download the object to a specific folder.
  + Choose the object that you want to download and then from the **Object actions** menu choose **Download** or **Download as** if you want to download the object to a specific folder.
  + If you want to download a specific version of the object, choose the name of the object that you want to download. Choose the **Versions** tab and then from the **Actions** menu choose **Download** or **Download as** if you want to download the object to a specific folder.

(Source - <https://docs.aws.amazon.com/AmazonS3/latest/userguide/accessing-an-object.html>)

# Copy your object to a folder

**To copy an object to a folder.**

* In the **Buckets** list, choose your bucket name.
* Choose **Create folder** and configure a new folder:
  + Enter a folder name (for example, favorite-pics).
  + For the folder encryption setting, choose **None**.
  + Choose **Save**.
* Navigate to the Amazon S3 bucket or folder that contains the objects that you want to copy.
* Select the check box to the left of the names of the objects that you want to copy.
* Choose **Actions** and choose **Copy** from the list of options that appears.
  + Alternatively, choose **Copy** from the options in the upper right.
* Choose the destination folder:
  + Choose **Browse S3**.
  + Choose the option button to the left of the folder name.
    - To navigate into a folder and choose a subfolder as your destination, choose the folder name.
  + Choose **Choose destination**.
  + The path to your destination folder appears in the **Destination** box. In **Destination**, you can alternately enter your destination path, for example, s3://bucket-name/folder-name/.
* In the bottom right, choose **Copy**.

(Source - <https://docs.aws.amazon.com/AmazonS3/latest/userguide/copying-an-object.html>)

# Analyzing a stored video

The following link provides the Java or Python code necessary to get started analyzing the stored video, however, there are a few things that need to be changed(python code example used below).

Text

Description automatically generated with low confidence

roleARN should be the ARN from step 3 in “Configuring Rekognition Video”, bucket needs to be the S3 bucket you created and where your videos are stored, then video needs to be the video you intend to analyze, for example, Test1.mp4.

Next, to be able to detect text, we need to add some more code which is provided here: <https://docs.aws.amazon.com/rekognition/latest/dg/text-detecting-video-procedure.html>

After following all of the steps above, you should be ready to start analyzing your videos for text.

(Source - <https://docs.aws.amazon.com/rekognition/latest/dg/video-analyzing-with-sqs.html>)