



QUICK START GUIDE

# VIA SOM-9X50-STK

Amazon KVS



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## Revision History

Version	Date	Remarks
1.00	09/03/2023	Initial release



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# 1. Introduction

This document provides instructions on how to set up Amazon Kinesis Video Streams (Amazon KVS) to connect with VIA SOM-9X50-STK devices.

**Note:**

The VIA SOM-9X50-STK includes the VIA SOM-9X50 module and the VIA VAB-950 reference carrier board.

## 1.1 Directing Data from a VIA SOM-9X50-STK Device to an AWS Portal

To direct data from VIA SOM-9X50-STK devices to your AWS cloud implementation, an Amazon KVS service must be set up and configured to receive data from the devices. An AWS access key is required for Amazon KVS to connect a device to the AWS backend.

Follow the steps listed in [section 2.2](#) to acquire an AWS access key for Amazon KVS. The access key (\*.csv) for the desired user ID will be created as described in [Step 8](#).

## 1.2 VIA SOM-9X50-STK Device

The datasheet and user manual of the VIA SOM-9X50-STK device can be found on the [VIA SOM-9X50-STK](#) product page.



## 2. Connecting to Amazon KVS

### 2.1 Introduction

This section provides instructions on how to establish a connection between a VIA SOM-9X50-STK device and Amazon KVS service, including how to acquire an AWS access key for Amazon KVS, set up the VIA SOM-9X50-STK device, and connect the device to the Amazon KVS using the VIA SOM-9X50-STK Yocto or Android EVK.

### 2.2 Acquiring an AWS Access Key for Amazon KVS

#### Step 1

Refer to instructions in the following sections on webpage <https://docs.aws.amazon.com/kinesisvideostreams/latest/dg/gs-account.html> to set up an AWS Account:

- Sign up for an AWS account
- Create an Administrator IAM User
- Create an AWS Access Key



#### Sign in

**Root user**  
Account owner that performs tasks requiring unrestricted access. [Learn more](#)

**IAM user**  
User within an account that performs daily tasks. [Learn more](#)

#### Root user email address

**Next**

By continuing, you agree to the [AWS Customer Agreement](#) or other agreement for AWS services, and the [Privacy Notice](#). This site uses essential cookies. See our [Cookie Notice](#) for more information.

New to AWS?

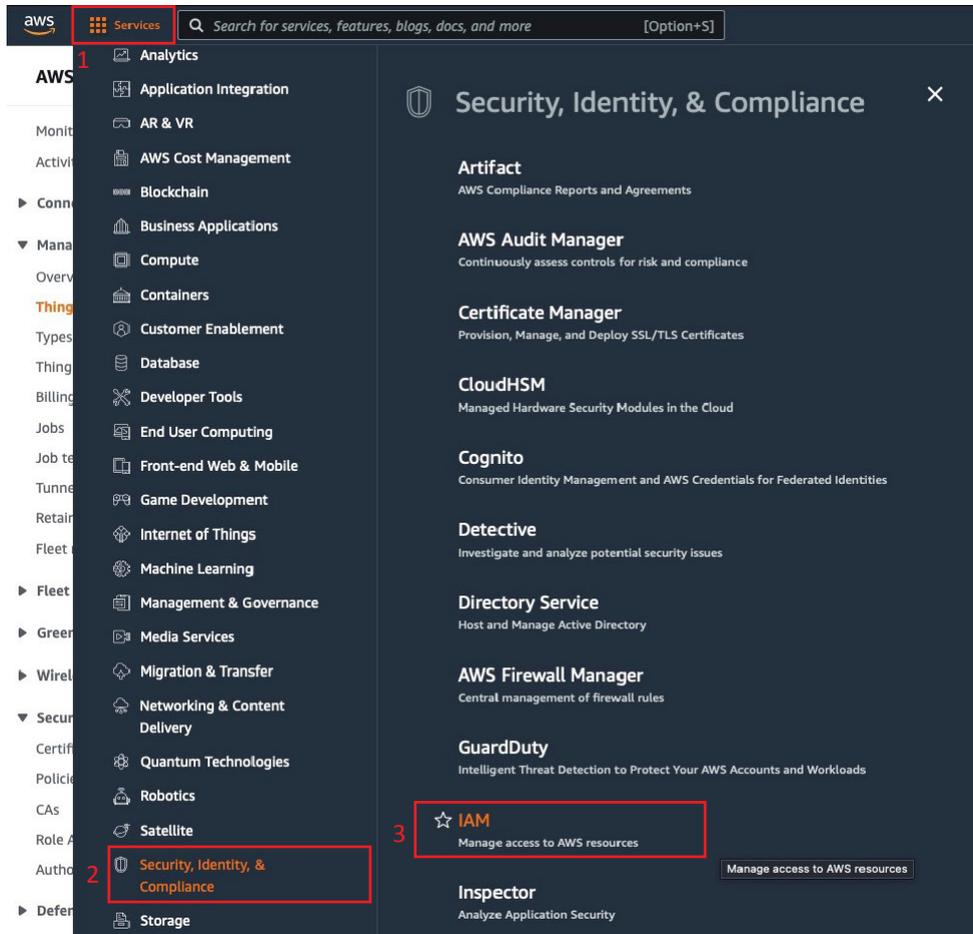
**Create a new AWS account**



Pay special attention to the Notes on the webpage.

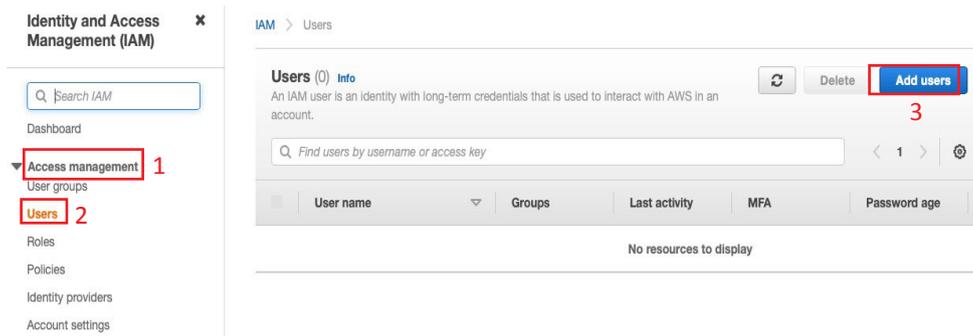
**Step 2**

Click on 'Services' in the top menu panel and click on 'IAM' under the 'Security, Identity, & Compliance' category.



**Step 3**

Click on 'Access management/Users' and then click on the 'Add users' button in the right panel.



### Step 4

To add a user, enter a preferred name in the 'User name' field, select 'Programmatic access' in the 'Select AWS access type' section and click on the 'Next: Permissions' button to proceed to set permissions.

Add user 1 2 3 4 5

---

Set user details

You can add multiple users at once with the same access type and permissions. [Learn more](#)

User name\*  1

[+ Add another user](#)

---

Select AWS access type

Select how these users will access AWS. Access keys and autogenerated passwords are provided in the last step. [Learn more](#)

Access type\*  **Programmatic access**  
Enables an **access key ID** and **secret access key** for the AWS API, CLI, SDK, and other development tools. 2

**AWS Management Console access**  
Enables a **password** that allows users to sign-in to the AWS Management Console.

---

\* Required 3

[Cancel](#) [Next: Permissions](#)

### Step 5

To set permissions, click on 'Attach existing policies directly', click on the policy name 'AmazonKinesisVideoStreamsFullAccess' and click on the 'Next: Tags' button to proceed to add tags.

Add user 1 2 3 4 5

---

Set permissions

[Add user to group](#) [Copy permissions from existing user](#) [Attach existing policies directly](#) 1

[Create policy](#) [Refresh](#)

Filter policies  Showing 2 results

	Policy name	Type	Used as	Description
<input checked="" type="checkbox"/>	AmazonKinesisVide...	AWS managed	None	Provides full access to Amazon Kinesis Vide...
<input type="checkbox"/>	AmazonKinesisVide...	AWS managed	None	Provides read only access to AWS Kinesis V...

2

---

Set permissions boundary

---

3

[Cancel](#) [Previous](#) [Next: Tags](#)

### Step 6

To add tags, enter relevant user information (e.g., email address, job title) or name only in the 'Key' field and click on the 'Next: Review' button to review your choices.

Add user 1 2 3 4 5

Add tags (optional)

IAM tags are key-value pairs you can add to your user. Tags can include user information, such as an email address, or can be descriptive, such as a job title. You can use the tags to organize, track, or control access for this user. [Learn more](#)

Key	Value (optional)	Remove
1 Add new key	<input type="text"/>	

You can add 50 more tags.

Cancel Previous Next: Review <sup>2</sup>

### Step 7

This page displays all the settings to be reviewed, including the User name, AWS access type and permissions boundary. To finish creating the user ID, click on the 'Create user' button.

Add user 1 2 3 4 5

Review

Review your choices. After you create the user, you can view and download the autogenerated password and access key.

User details

<b>User name</b>	VIA-KVS-SDK
<b>AWS access type</b>	Programmatic access - with an access key
<b>Permissions boundary</b>	Permissions boundary is not set

Permissions summary

The following policies will be attached to the user shown above.

Type	Name
Managed policy	AmazonKinesisVideoStreamsFullAccess

Tags

No tags were added.

Cancel Previous Create user

**Step 8**

Once the user ID has been created, a 'Success' message will be displayed. Click on the URL in the message for more information on AWS management console access. The User name, Access key ID and the Secret access key are shown below the message. Download the Secret access key (\*.csv) file and click 'Close' to finish.

Add user 1 2 3 4 **5**

**Success**  
 You successfully created the users shown below. You can view and download user security credentials. You can also email users instructions for signing in to the AWS Management Console. This is the last time these credentials will be available to download. However, you can create new credentials at any time.

Users with AWS Management Console access can sign-in at: <https://viatp2.signin.aws.amazon.com/console>

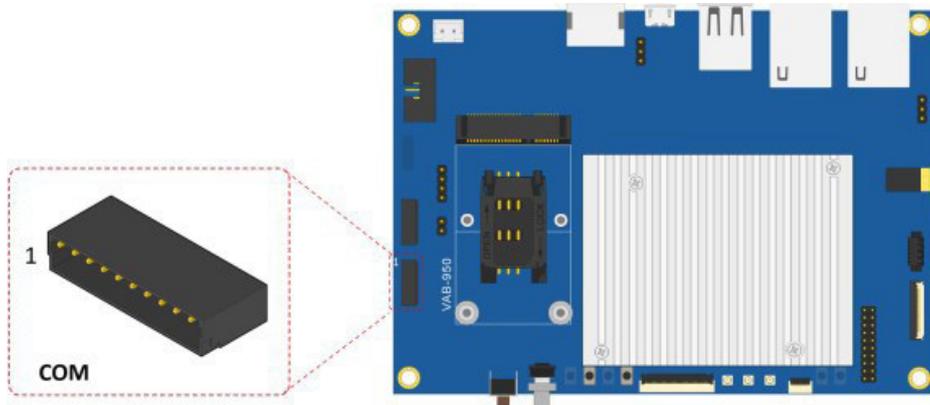
[Download .csv](#)

	User	Access key ID	Secret access key
▶	✓ VIA-KVS-SDK	AKIAWO2AXU6URD7WNNZ7	***** Show

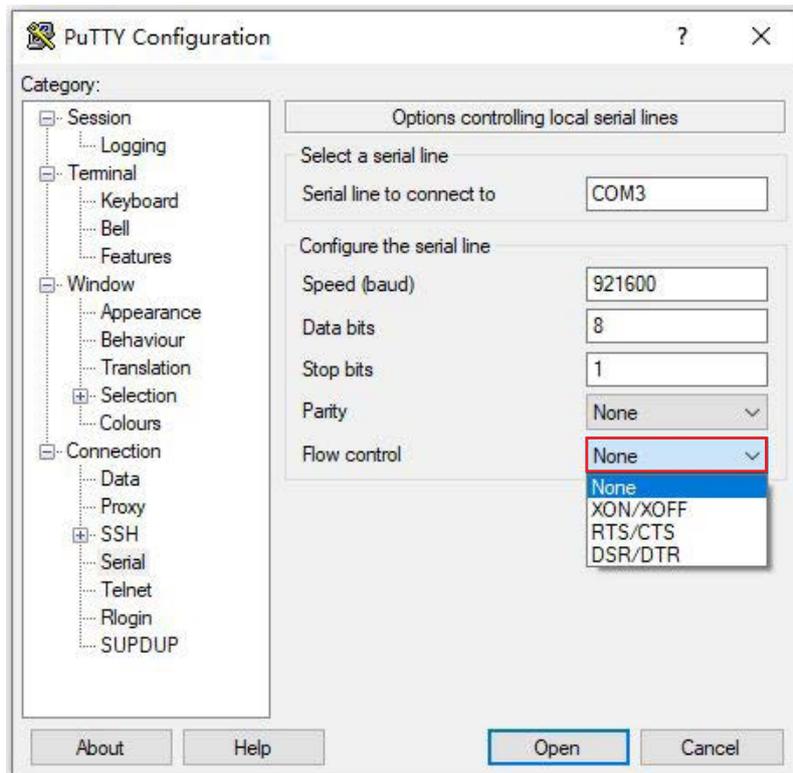
Comprehensive documentation is provided by Amazon Web Services. Follow the AWS development guide to add Kinesis Video Streams with different settings on Amazon Web Services. For more information, please visit: <https://docs.aws.amazon.com/kinesisvideostreams/latest/dg/what-is-kinesis-video.html>.

## 2.3 Set up the VIA SOM-9X50-STK Device

The first step is to connect a host machine and the VIA SOM-9X50-STK through the onboard COM connector labeled as "COM".



Use a serial port communication program such as PuTTY or Tera Term to connect the debug console. Set the console Baud Rate to "921600".



## 2.4 Connecting to Amazon KVS with the Yocto EVK

The VIA SOM-9X50-STK Yocto EVK includes a "kvs\_demo.sh" application to help establish a connection between the VIA SOM-9X50-STK device and the Amazon KVS service.

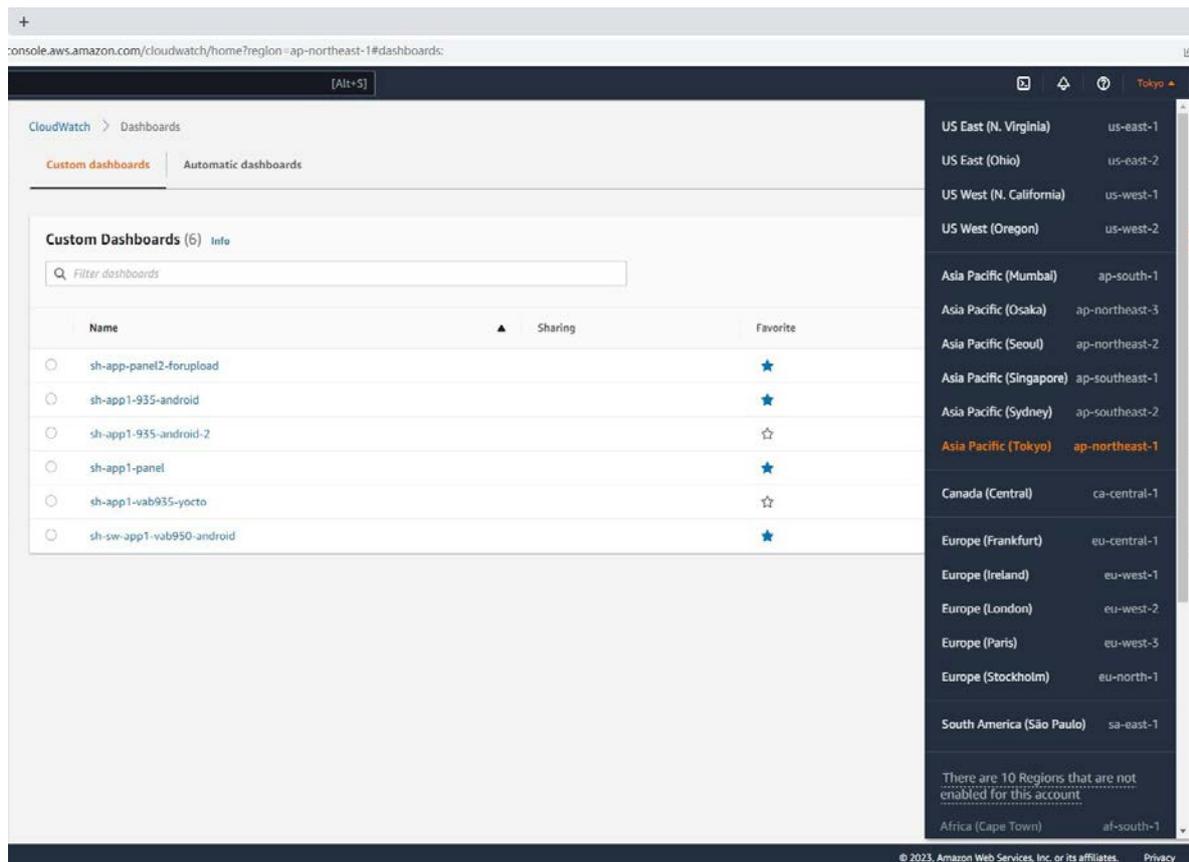
This section guides developers on how to enable and run the "kvs\_demo.sh" application.

### Step 1

Copy the Secret access key (\*.csv) file downloaded in [Step 8 of section 2.2](#) to the "/data" location.

### Step 2

Check the AWS Web console for the Region.

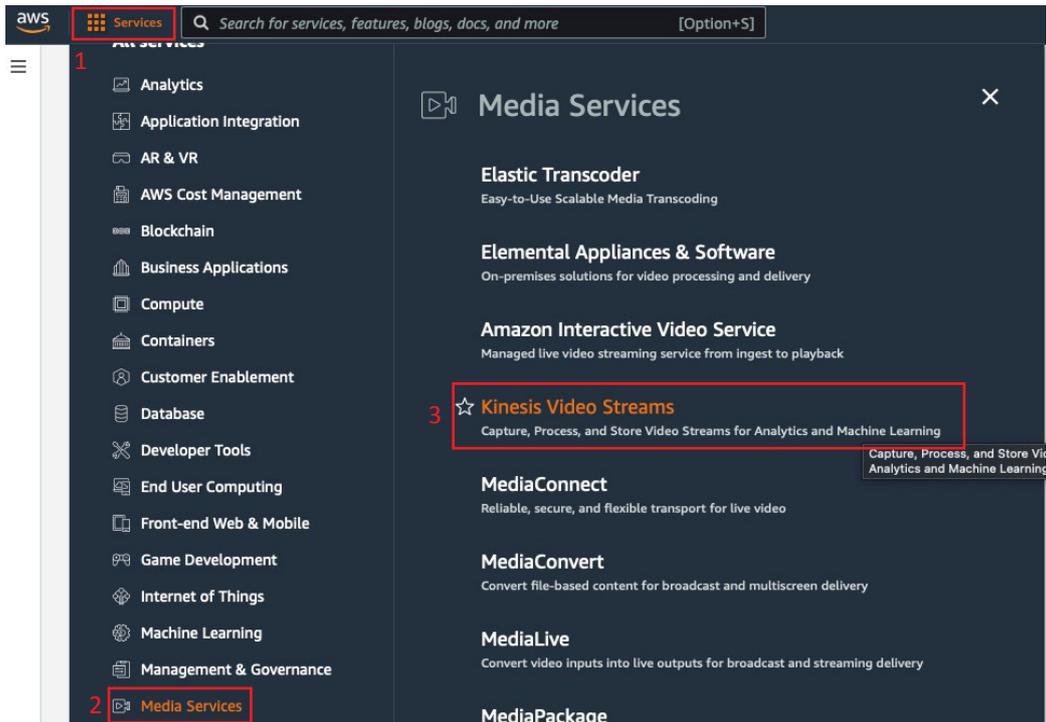


### Step 3

Run the "kvs\_demo.sh" script as shown below:

```
root@aiv8385-linux:~# kvs_demo.sh /data/ sh-sw-app1_accessKeys.csv "ap-northeast-1"
```

If there are no errors, there will be one KVS stream available. To view the stream, click on 'Services' in the top menu panel and click on 'Kinesis Video Streams' under the 'Media Services' category.



#### Step 4

Next, click on 'View video streams' in the right panel.



The names, status, retention (in hours) and creation time of the KVS stream will be displayed.



Comprehensive documentation is provided by Amazon Web Services. Follow the AWS development guide to add Kinesis Video Streams with different settings on Amazon Web Services. For more information, please visit: <https://docs.aws.amazon.com/kinesisvideostreams/latest/dg/what-is-kinesis-video.html>.

## 2.5 Connecting to Amazon KVS with the Android EVK

The VIA SOM-9X50-STK Android EVK includes an "AmazonKinesisVideoDemoApp" application to help establish a connection between the VIA SOM-9X50-STK device and the Amazon KVS service.

This section guides developers on how to enable and run the "AmazonKinesisVideoDemoApp" application.

### Step 1

Download the "AmazonKinesisVideoDemoApp" sample code from webpage <https://github.com/aws-labs/aws-sdk-android-samples/tree/main/AmazonKinesisVideoDemoApp>.

### Step 2

Follow the instructions on the following webpages:

- <https://github.com/aws-labs/aws-sdk-android-samples/blob/main/AmazonKinesisVideoDemoApp/README.md> to run the sample code.
- <https://docs.aws.amazon.com/kinesisvideostreams/latest/dg/producersdk-android-downloadcode.html> to download and configure the Android Producer Library Code.

### Step 3

Change the "KINESIS\_VIDEO\_REGION" field value to your AWS Web console's Region in the sample code file "KinesisVideoDemoApp.java" at location "/src/main/java/com/amazonaws/kinesisvideo/demoapp".

```
14 public class KinesisVideoDemoApp extends Application {
15     public static final String TAG = KinesisVideoDemoApp.class.getSimpleName();
16     public static Regions KINESIS_VIDEO_REGION = Regions.US_WEST_2;
```

### Step 4

The default framerate is 20 and the default bitrate is 384 kbps. Change the "FRAMERATE\_20" and "BITRATE\_384\_KBPS" field values to your video streams' frame rate and bitrate in the sample code file "StreamConfigurationFragment.java" at location "/src/main/java/com/amazonaws/kinesisvideo/demoapp/fragment".

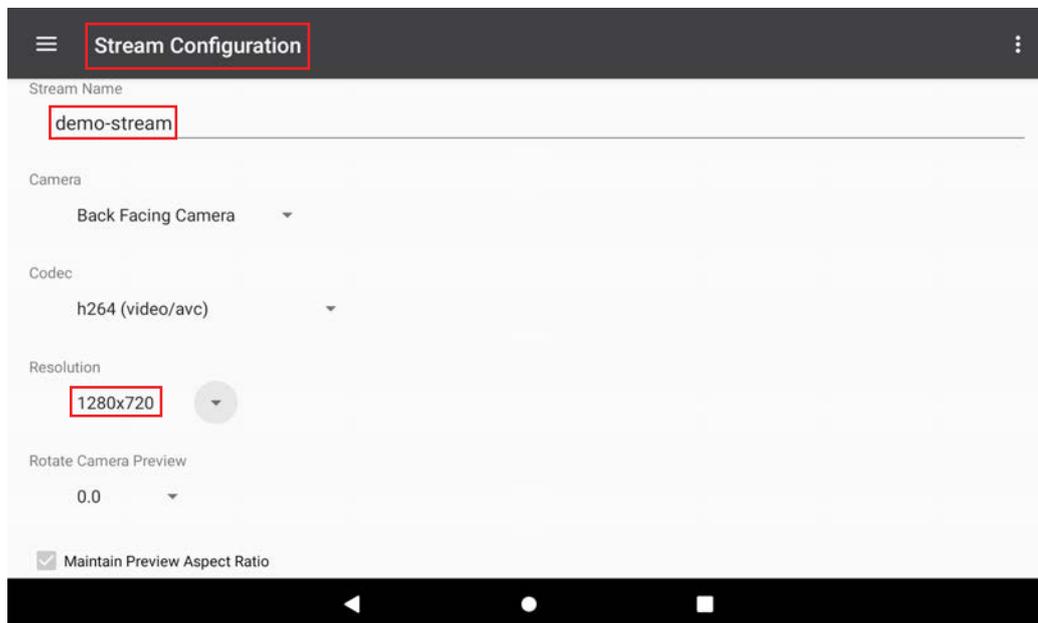
```
38 public class StreamConfigurationFragment extends Fragment {
39     private static final String TAG = StreamConfigurationFragment.class.getSimpleName();
40     private static final Size RESOLUTION_320x240 = new Size(320, 240);
41     private static final int FRAMERATE_20 = 20;
42     private static final int BITRATE_384_KBPS = 384 * 1024;
43     private static final int RETENTION_PERIOD_48_HOURS = 2 * 24;
```

**Step 5**

Sign in to the "AmazonKinesisVideoDemoApp" application. The "Stream Configuration" screen will be displayed.

**Step 6**

Fill in the Stream Name, select the Resolution as "1280x720", scroll to the bottom and click the "Stream" button.







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