aws elemental

VLC MEDIA PLAYER TO AWS ELEMENTAL MEDIALIVE TO AWS ELEMENTAL MEDIAPACKAGE

Workflow Example

CONTENTS

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

INTRODUCTION

This workflow example illustrates how to use a workstation running VLC media player to send a high definition (HD) feed using RTP to AWS Elemental MediaLive, where we will encode an ABR stream set using an HLS output group to send the content to AWS Elemental MediaPackage.

In the text below the VLC player workstation is referred to as “the appliance”.

Note: VLC media player does not have the ability to provide Forward Error Correction (FEC) streams for RTP. Streams sent without FEC are subject to data loss or corruption.

Note: To use this workflow in production, it is highly recommended you use the AWS Elemental MediaPackage endpoint as an origin for a CDN such as Amazon CloudFront. The AWS Elemental MediaPackage console includes an option to create a CloudFront distribution during channel creation.

REQUIREMENTS

To perform this procedure, you must be familiar with the configuration of VLC media player. You also must have all of the required information for your particular source, excluding the configuration of the streaming settings directed towards AWS Elemental MediaLive.

ORDER OF WORK

1. Obtain needed information.
2. Create two channels in AWS Elemental MediaPackage.
3. Create an input in AWS Elemental MediaLive.
4. Create a channel in AWS Elemental MediaLive.
5. Send the file and start the video stream.

PREREQUISITE: OBTAIN NEEDED INFORMATION

Obtain the public IP address (or addresses) from the appliance that you will use to send the feed to the AWS Elemental MediaLive input.

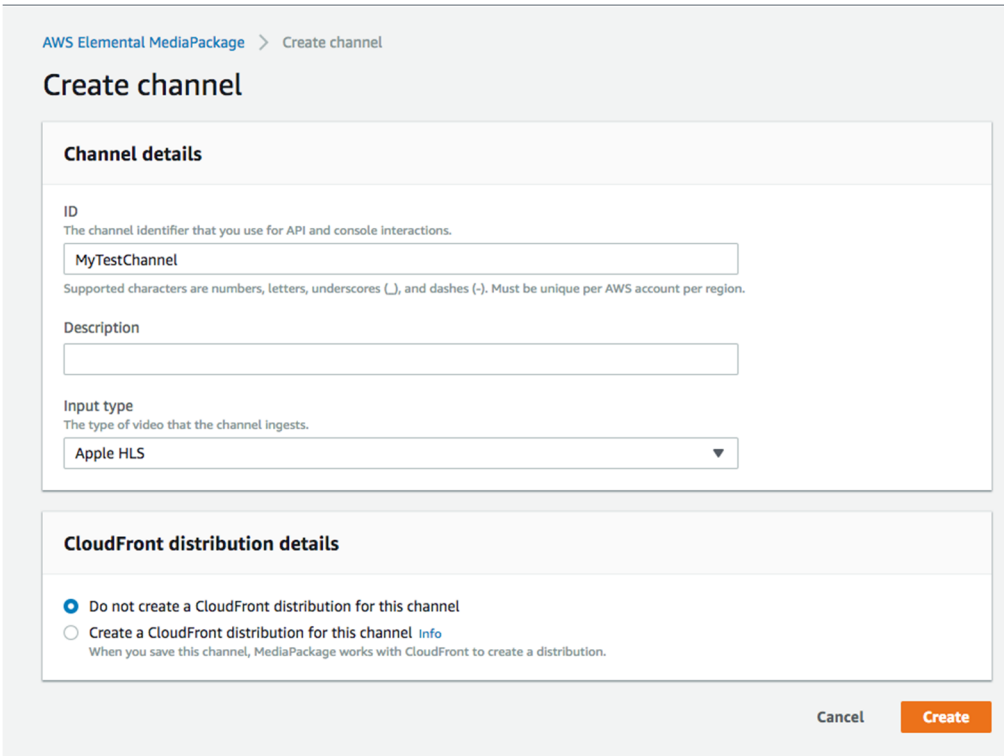
Note: If there is a firewall between the appliance and the internet (highly recommended), the public IP addresses will likely be different from those that the appliance reports. If so, you need to determine the external address being used. The appliance network may also be configured to utilize a pool of external IP addresses. In this case, you will need the CIDR range for the entire pool to include in the Input Security Group.

STEP A: CREATE A CHANNEL IN AWS ELEMENTAL MEDIAPACKAGE

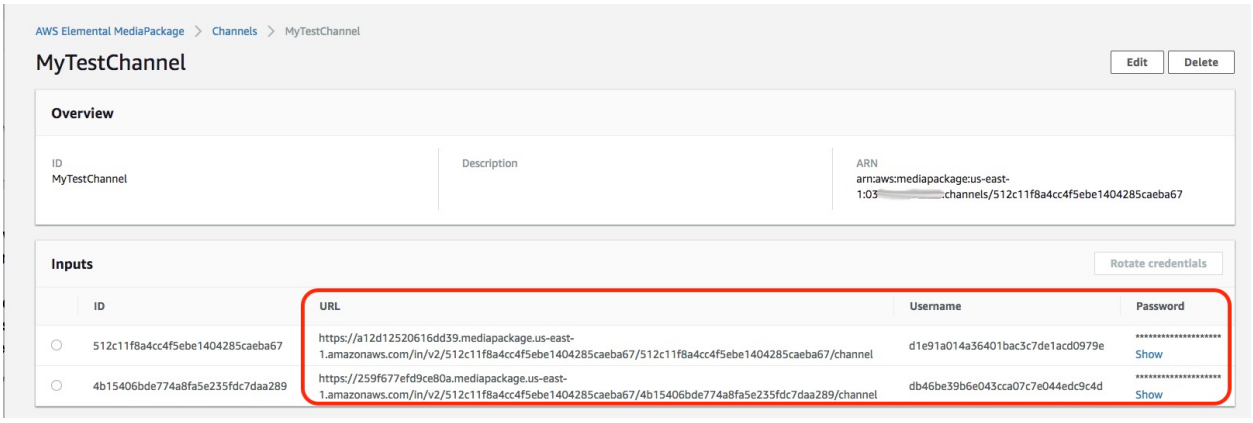
In order to create your AWS Elemental MediaLive channel, you must first know the destination URLs and credentials for your output(s). For this example, use AWS Elemental MediaPackage as your destination. MediaLive requires two output destinations per output group, and MediaPackage provides two inputs per channel:

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

1. Log into the AWS Elemental MediaPackage console for the same region where you will be using AWS Elemental MediaLive.
2. If you have previously created channels in MediaPackage, the channel listing view will appear. Otherwise the introductory landing page will appear.
    a. From the landing page, enter a channel name and choose **Next Step**.
    b. From the Channel Listing page, choose **Create Channel**.
3. For either case above, you should now see the Create channel page:



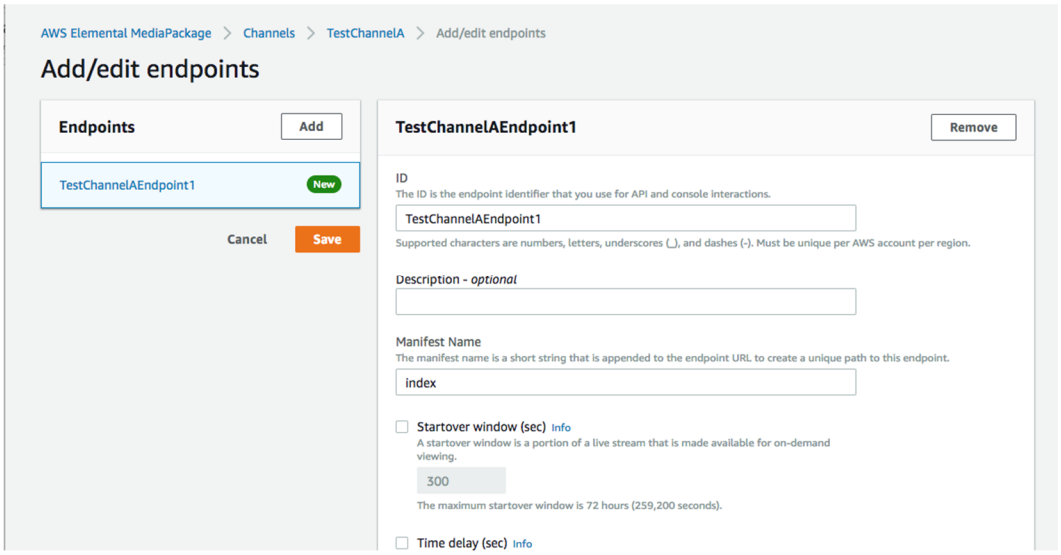
1. Add a description, if desired. Note that there is an option to create a CloudFront distribution to work with this channel. For production workloads it is important to place a content distribution network (CDN) in front of the MediaPackage endpoints. Choose **Create** to save and create the channel. The channel detail page appears.



4. Make a note of the **Input URL**, **Username**, and **Password** for each of the two inputs (use the **show** button to reveal the password) as you will need to use these values when creating your AWS Elemental MediaLive channel.

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

5. Just below the channel detail tile, choose **Add endpoints** to create an appropriate endpoint to be able to view your channel. For this example, it is sufficient to create a simple HLS endpoint so just give it a unique name in the **ID** field and choose **Save** to create the endpoint.



When the AWS Elemental MediaLive channel is up and running you will be able to point an HLS compatible player or browser at the endpoint (or the CloudFront URL if you enabled CloudFront at channel creation)to view the channel, or you can preview if from inside the AWS Elemental MediaPackage console.

6. Keep this browser session active so you can easily come back later to check your channel.

STEP B: SET UP INPUTS IN AWS ELEMENTAL MEDIALIVE

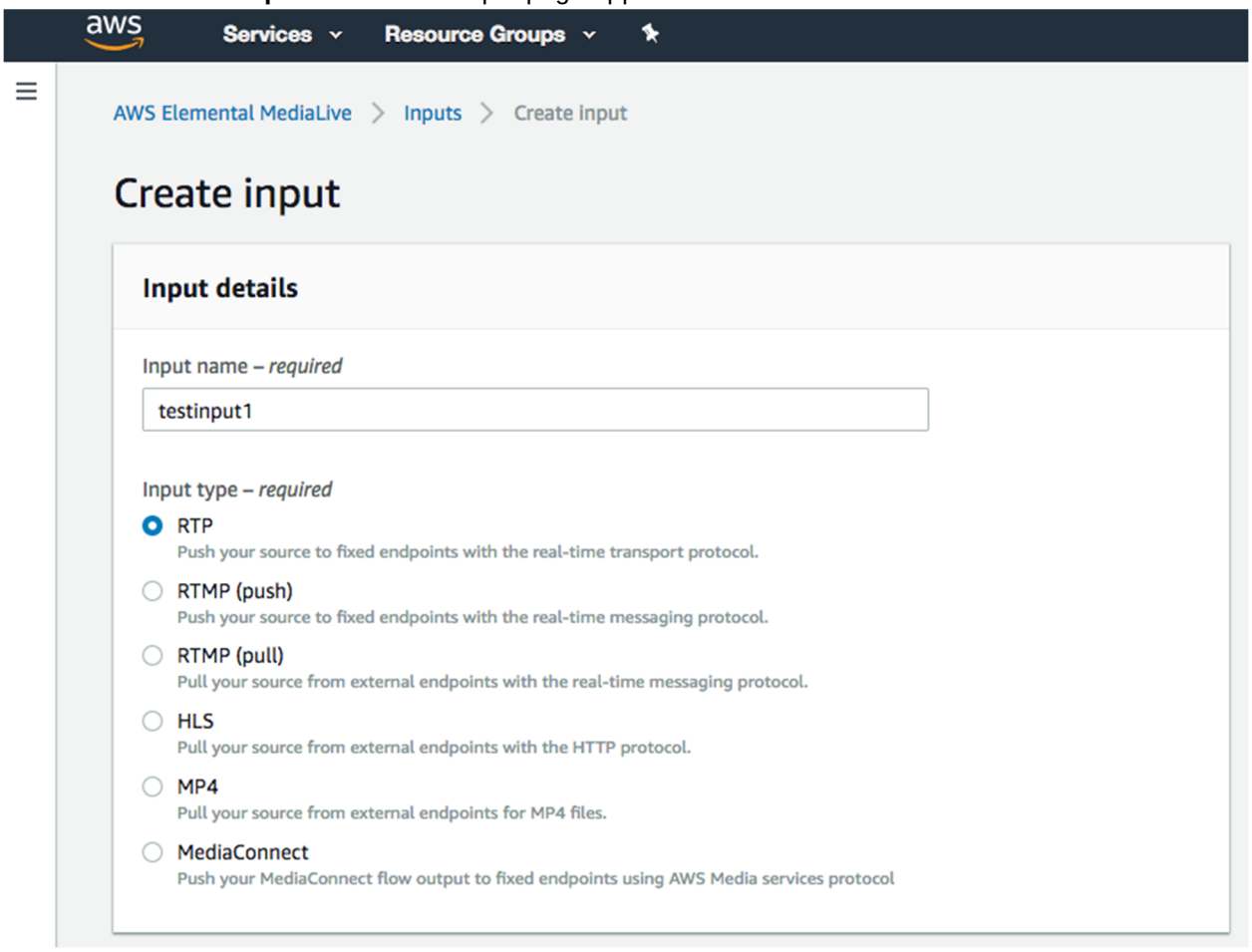
1. In a new browser tab or window, log into the AWS Elemental MediaLive console for the same region you just used to create your AWS Elemental MediaPackage channels and endpoints.

2. Take the appropriate action:
   - If the standard service page appears, choose **Inputs** from the navigation panel on the left side.
   - If the service landing page appears, expand the left-hand menu by choosing the three horizontal lines near the top just below the AWS icon. Choose **Inputs**.

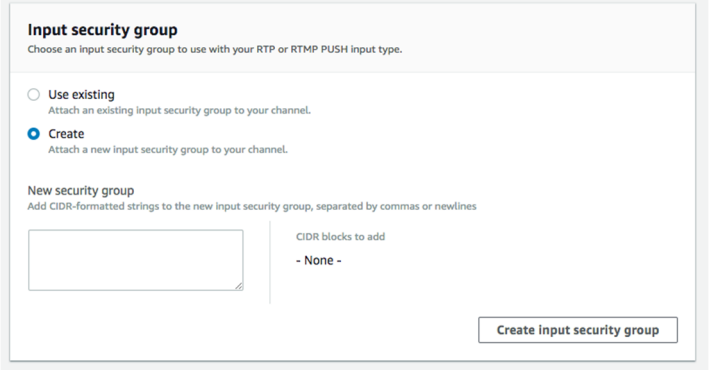
   The Input listing page appears.

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

3. Choose **Create input**. The Create input page appears.



4. Complete the fields as follows:
   - **Input name**: Assign a meaningful name.
   - **Input type**: Choose **RTP**.
   - **Input security group**: Choose **Create**.



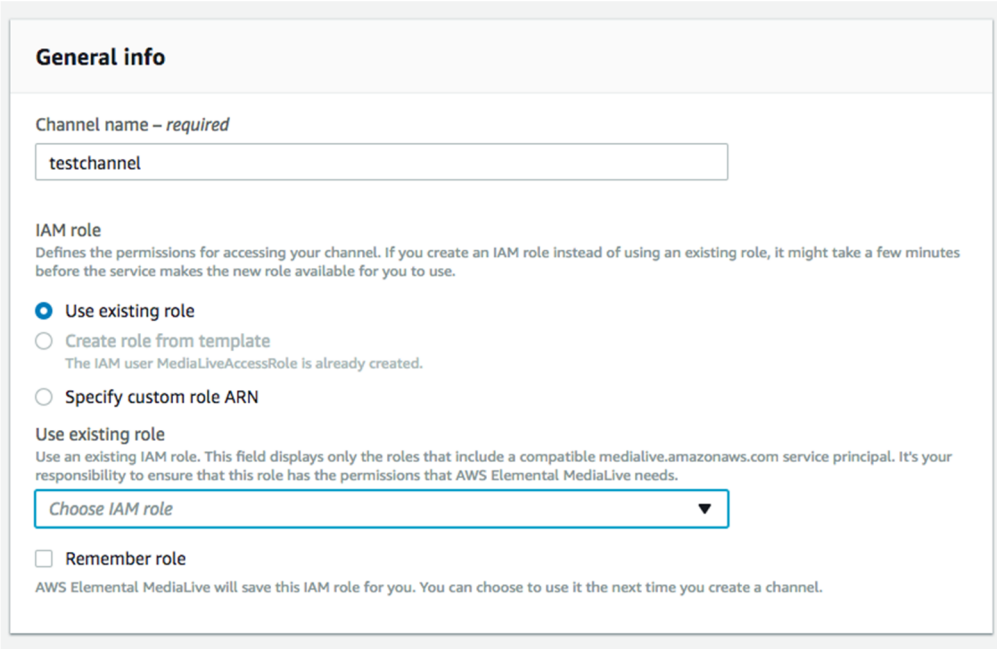
© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

- **New security group**: Using CIDR format, type the set of IP addresses from the Prerequisite step in this document. If you're entering a range, specify a mask that encompasses all of the addresses, or enter several CIDR entries to encompass all of the addresses.

5. Choose **Create input security group**. The tile changes to show the newly created group.
6. Choose **Create.** The new input appears in the list of inputs.
7. Make a note of the endpoint URLs. You will need to enter them in the VLC media player streaming configuration.
8. Leave this page open. You will return to it in a later step.

STEP C: CREATE A CHANNEL IN AWS ELEMENTAL MEDIALIVE

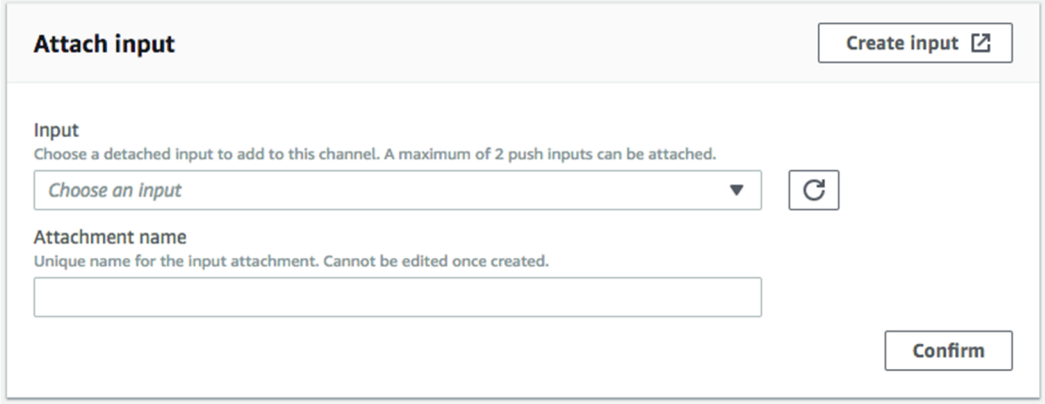
1. Choose **Channels** from the left-hand column, then choose **Create channel**. The Create channel page appears.
2. For **Channel name**, type a meaningful identifier for the channel.
3. In the **Channel template** section, choose **HTTP Live Streaming**. The Channel navigation panel is populated with:
   - One output group named TN2224 (HLS)
   - Ten outputs that all belong to that output group.
4. In the IAM role section, take the appropriate action:
   - If the **Create role from template** option is *enabled*, select that option and choose **Create IAM role**. The role is created. Once the creation process is complete, the role is automatically selected from the **Use existing role** drop-down.
   - If the **Create role from template** option is *grayed out*, select **Use existing role** and then select **MediaLiveAccessRole** from the dropdown.



5. Under Input specifications, adjust the Maximum input bitrate, input resolution, and codec as appropriate for the content you will be sending from your appliance.
6. In the left-hand column choose the Add button beside **Input attachments**. The Attach input card appears to the right. Choose the input you created earlier from the drop-down and then choose

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

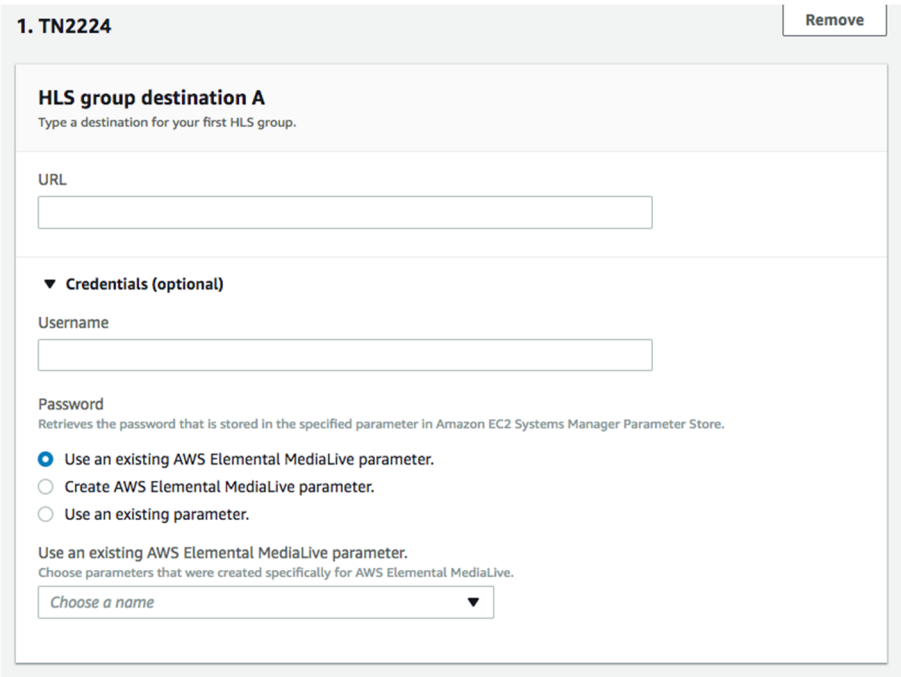
Confirm. Additional options appear to configure the network input settings, which you can adjust if necessary for your particular source.



7. In the navigation panel on the left under **Output groups**, choose the **TN2224 (HLS)** output group. The details for that output group appear to the right.

   - In the **HLS group destination A** section, expand the **Credentials** sub-section, then complete the fields with the information from the *first* input of the AWS Elemental MediaPackage channel you created earlier (as described in Step A, part 4).
   - **URL**: Type the first URL.
   - **Username**: Type the first username.
   - From the list of **Password** options, select the **Create AWS Elemental MediaLive parameter.** In **Name**, enter a meaningful name for the EC2 parameter store entry where your credentials will be stored.
   - **Password**: Type the first password from the AWS Elemental MediaPackage channel. The password will be stored securely in the AWS EC2 parameter store under the name medialive/<name you entered above>.
   - Choose the **Create AWS Elemental MediaLive parameter** button to create it.

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.



8. Repeat step 7 for **HLS group destination B**, completing the fields with the information from the *second* input of the AWS Elemental MediaPackage channel.
9. Under HLS settings, change “Input Loss Action” from EMIT_OUTPUT to PAUSE_OUTPUT. This will allow AWS Elemental MediaPackage to detect a loss of input on one of the MediaLive pipelines and switch any endpoints using the failed pipeline to use the other redundant pipeline.
10. This channel template includes a WebVTT captions output. However, we didn’t define a caption selector on the input, nor did we configure captions on the source appliance. Navigate to the HLS outputs card and choose the X to the right of Output 10 (_webvtt) to delete the captions output.
11. Choose **Create channel**. The page with the list of channels appears, showing the new channel. The status of the channel changes from Creating to Idle.

STEP D: START STREAMING THE VIDEO

To start streaming the video, you need to send the file using VLC media player, and start the channels in AWS Elemental MediaLive. For RTP sources, the order of starting either the VLC player or the AWS Elemental MediaLive channel first is not critical.

1. Set up a command line to send a file using VLC media player to the inputs in AWS Elemental MediaLive that you created in Step B.
   See the following example, noting that:
   - The syntax in the example is appropriate for VLC media player in a Windows environment. The command may differ on other platforms.
   - You must replace the portions in angle brackets with the appropriate information from your system.

   For example, `<path-to-vlc-executable>` could translate to `C:\Program Files(x86)\Videolan\VLC\`

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

```
<path-to-vlc-executable>vlc <sourcefile> --loop
:sout=#transcode{vcodec=h264,vb=5000,acodec=mpga,ab=128,channels=2,samplerate=44100
}:duplicate{dst=<my_ip_1>,port=5000,mux=ts},dst=rtp{dst=<my_ip_2>,port=5000,mux=ts}
} :sout-keep
```

Once the command is launched, VLC media player begins sending video to the inputs of your channel in AWS Elemental MediaLive. With the `--loop` option in the command line, the file is repeated until the program is stopped.

2. In AWS Elemental MediaLive, on the **Channels** page, choose the radio button next to your new channel. The buttons along the top are enabled.
3. Choose **Start**.
   The channel state changes to Starting, and then to Running.

Video should start streaming from the appliance through to AWS Elemental MediaLive, then to AWS Elemental MediaPackage, where you can view it in a preview window.

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.