OBS Studio to AWS Elemental MediaLive to AWS Elemental MediaPackage

Workflow Example

CONTENTS

INTRODUCTION

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

In our examples, the OBS Studio workstation is referred to as “the appliance.”

Note: As part of its resiliency model, AWS Elemental MediaLive uses redundant encoding pipelines for Standard mode channels. OBS Studio can’t send its output to more than one destination, so it isn’t possible to leverage this level of redundancy for this particular workflow.

Note: To use this workflow in production, you must 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 the OBS Studio software. 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. Get needed information.
2. Create a channel in AWS Elemental MediaPackage.
3. Create an input in AWS Elemental MediaLive.
4. Configure the OBS Studio software (“the appliance”).
5. Create a channel in AWS Elemental MediaLive.
6. Start the video stream.

PREREQUISITE: GET NEEDED INFORMATION

You need the public IP address (or addresses) from the appliance that you are using 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 are likely different from those reported by the appliance. If so, determine the external address being used. The appliance network may also be configured to use a pool of external IP addresses. In this case, you need the CIDR range for the entire pool to include in the Input Security Group.

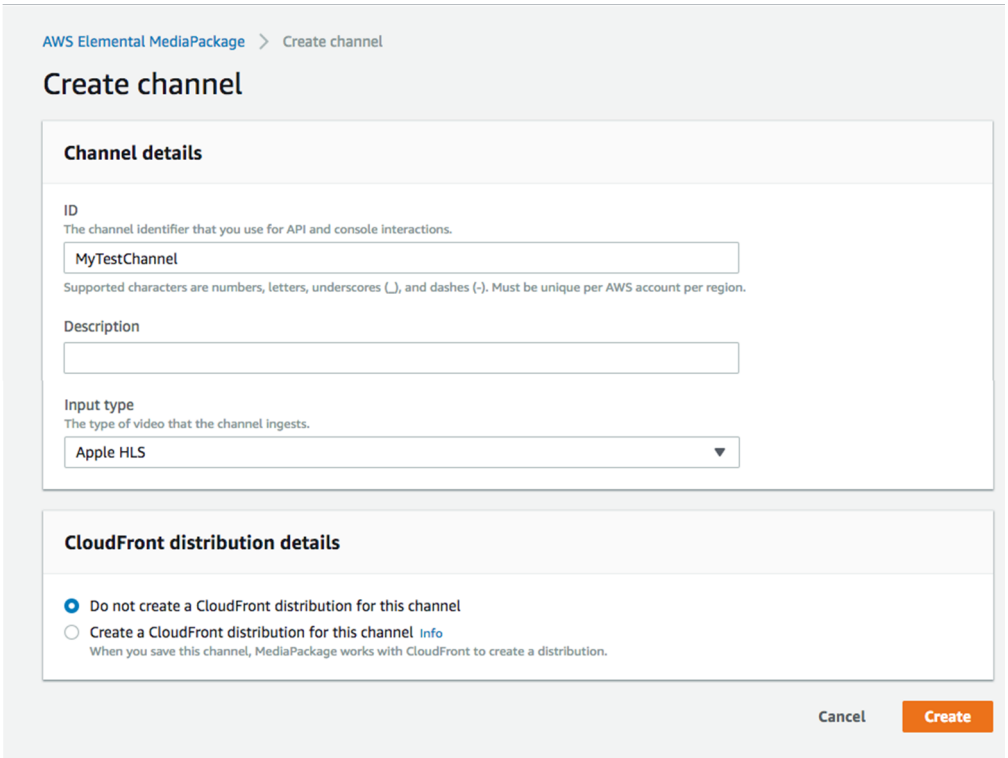
STEP A: CREATE A CHANNEL IN AWS ELEMENTAL MEDIAPACKAGE

In order to create your AWS Elemental MediaLive channel, you must have a destination for that channel’s output. For this example, use AWS Elemental MediaPackage as your destination.

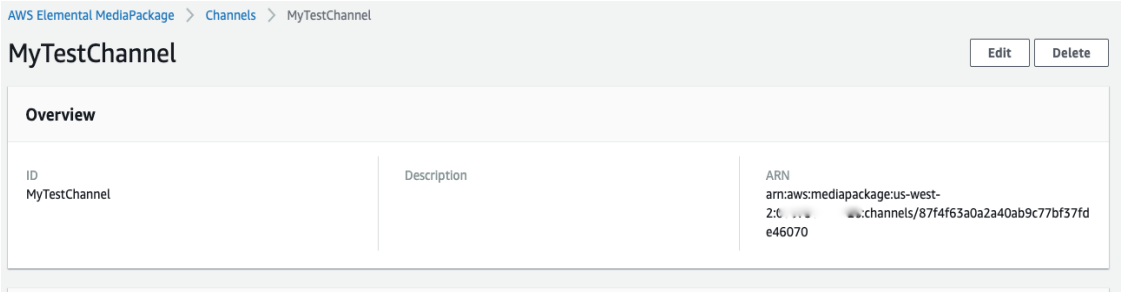
By using the MediaPackage output group type, you can configure the channel in MediaLive using only the name of the MediaPackage channel:

1. Log in to 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 appears. If not, the introductory landing page appears.
    a. From the landing page, enter a unique channel name and choose **Next Step**.
    b. From the Channel Listing page, choose **Create Channel**.
3. For either case, you should now see the Create channel page:

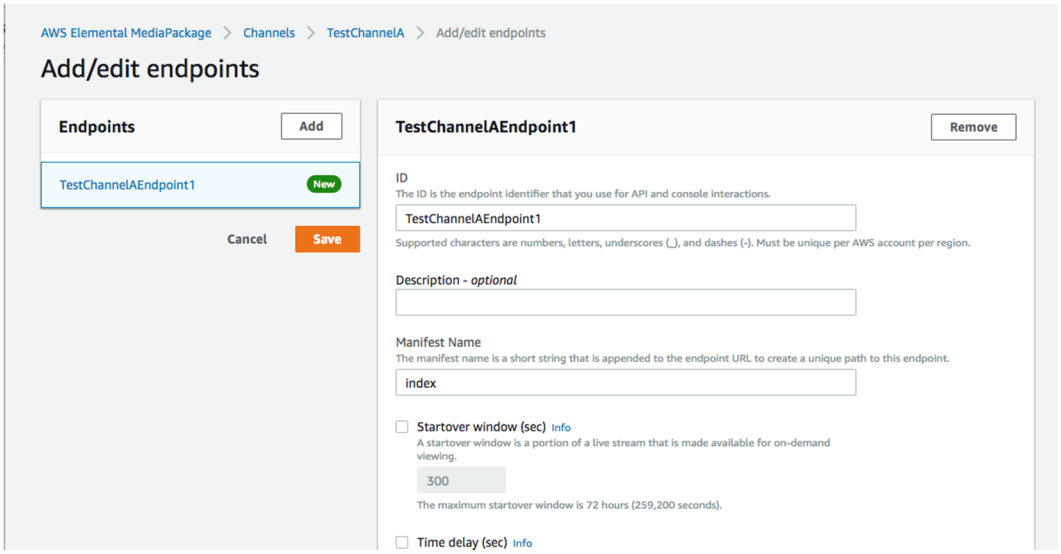


4. Add a description if desired. There is an option to create a CloudFront distribution to work with this channel. For production workloads it is important to place a content distribution network (CDN) in front of the MediaPackage endpoints. Choose **Create** to save and create the channel. The channel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



Make a note of the **ID** as you need it when creating your AWS Elemental MediaLive channel.

2. 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. Just give it a unique name in the **ID** field and choose **Save** to create the endpoint.



When the MediaLive channel is up and running you can point an HLS compatible player or browser at the endpoint to view the channel. You can also preview it from inside the MediaPackage console.

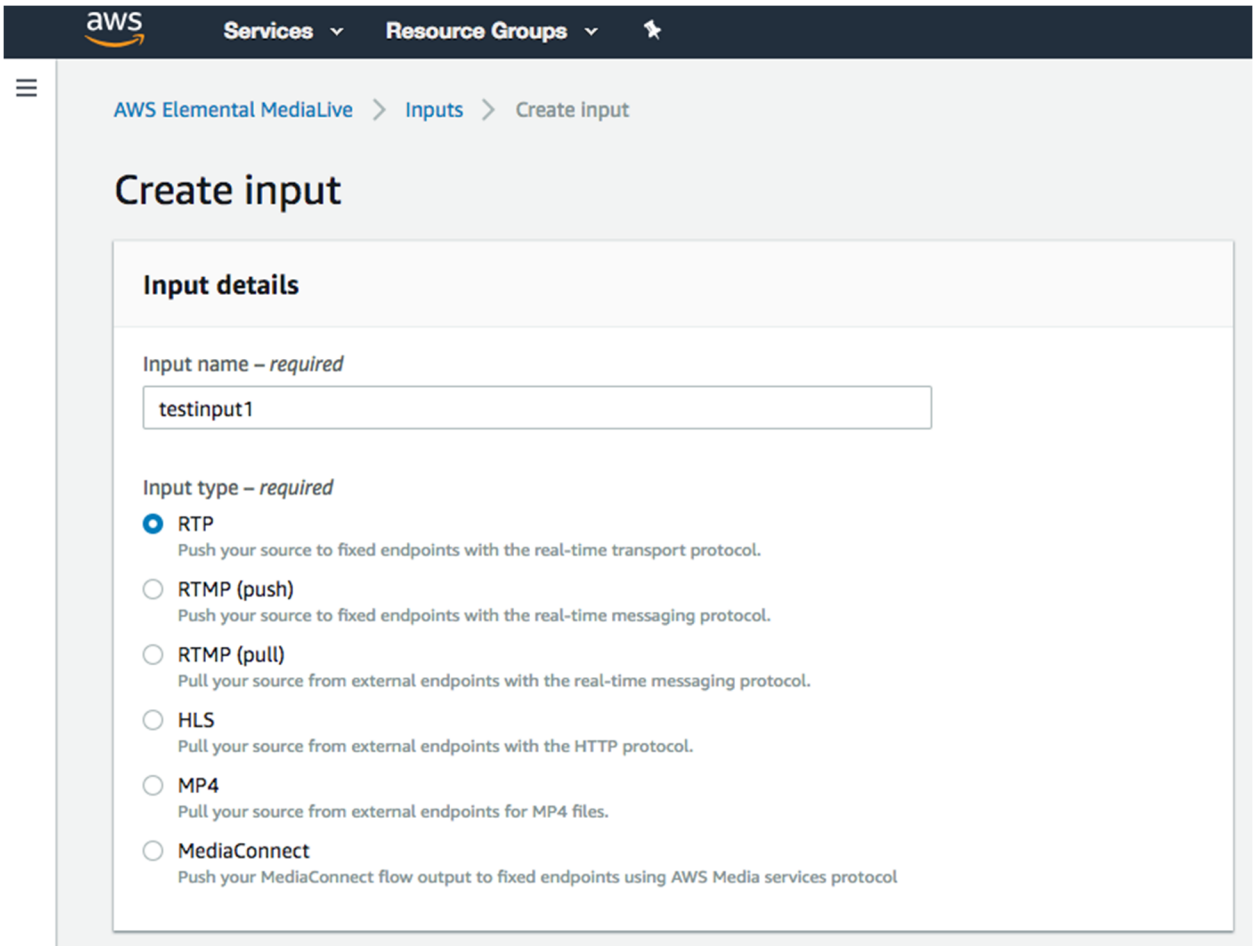
3. Keep this browser session active so you can easily come back later to check your channel.

STEP B: SET UP INPUTS IN AWS ELEMENTAL MEDIALIVE

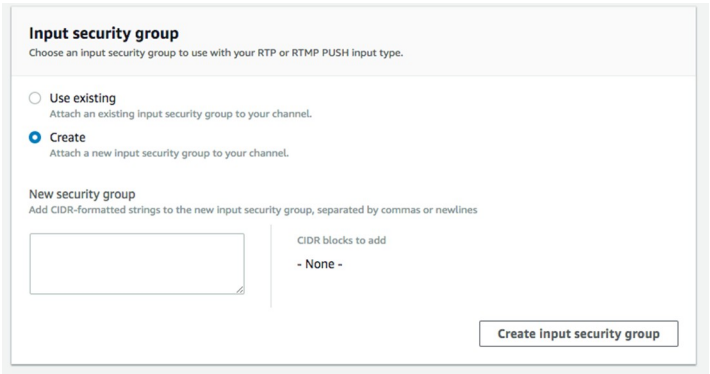
1. In a new browser tab or window, log in to the AWS Elemental MediaLive console for the same region you just used to create your AWS Elemental MediaPackage channels and endpoints.
2. Open the Input Listing page:
    a. If the standard service page appears, choose **Inputs** from the navigation panel on the left side.
    b. 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.

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

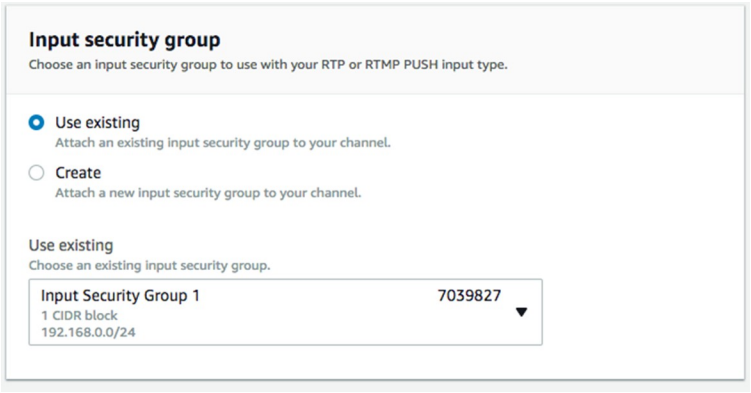


4. Complete the fields:
   a. **Input name**: Assign a meaningful name.
   b. **Input type**: Choose **RTMP (push)**.
   c. **Network mode:** Choose **Public.**
   d. **Input security group**: Choose **Create**.

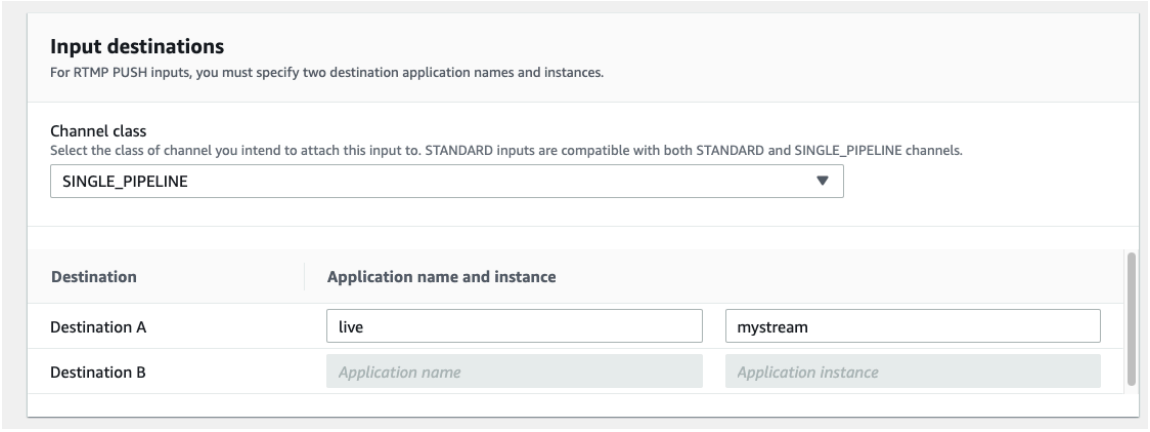


   e. **New security group**: Using CIDR format, type the set of IP addresses you gathered in the Prerequisite step. If you're entering a range, specify a mask that includes all of the addresses, or enter several CIDR entries to account for all of the addresses.

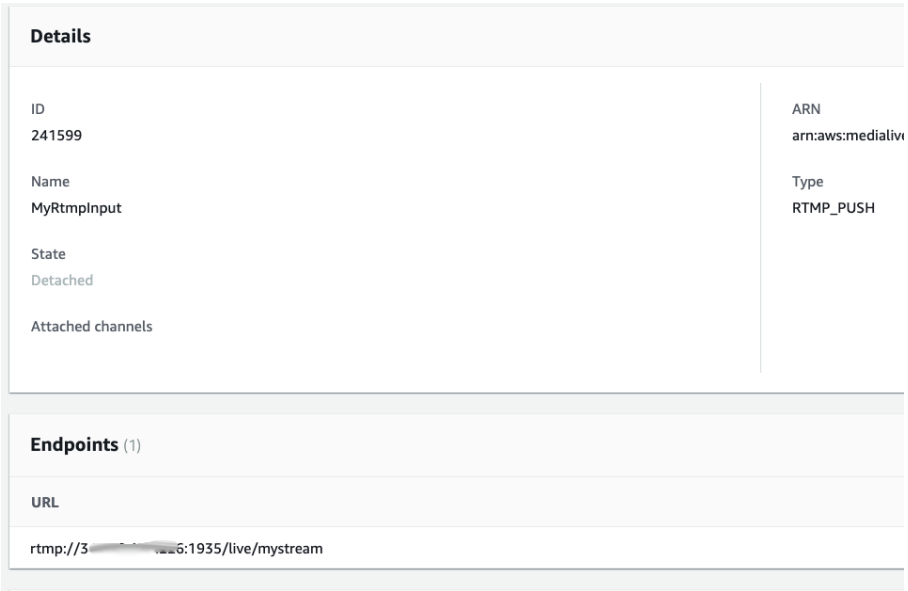
5. Choose **Create input security group**. The tile changes to show the newly created group.



6. In the **Input destinations** section, choose **SINGLE_PIPELINE** for **Channel class,** then enter **application name** and **application instance** (stream name) in the fields provided. You use these names in the OBS setup in Step C.



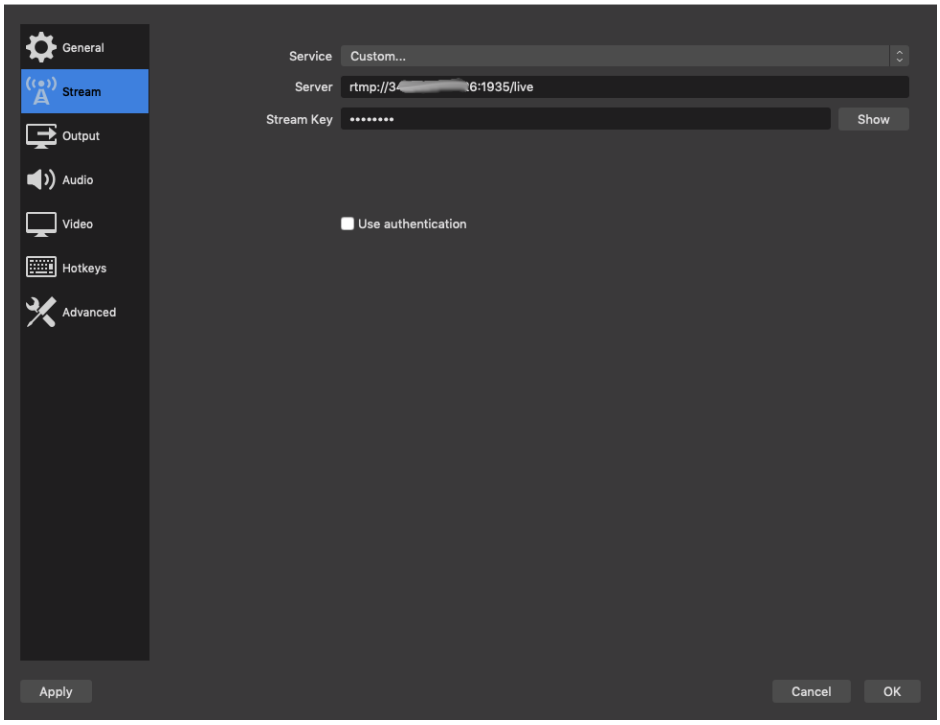
7. Choose **Create**. The new input appears in the list of inputs.
8. Open the detail page for the newly-created inputs, and make a note of the endpoint URL. You enter it in the OBS streaming configuration in Step C.



9. Leave this page open. You return to it in a later step.

STEP C: CONFIGURE THE APPLIANCE

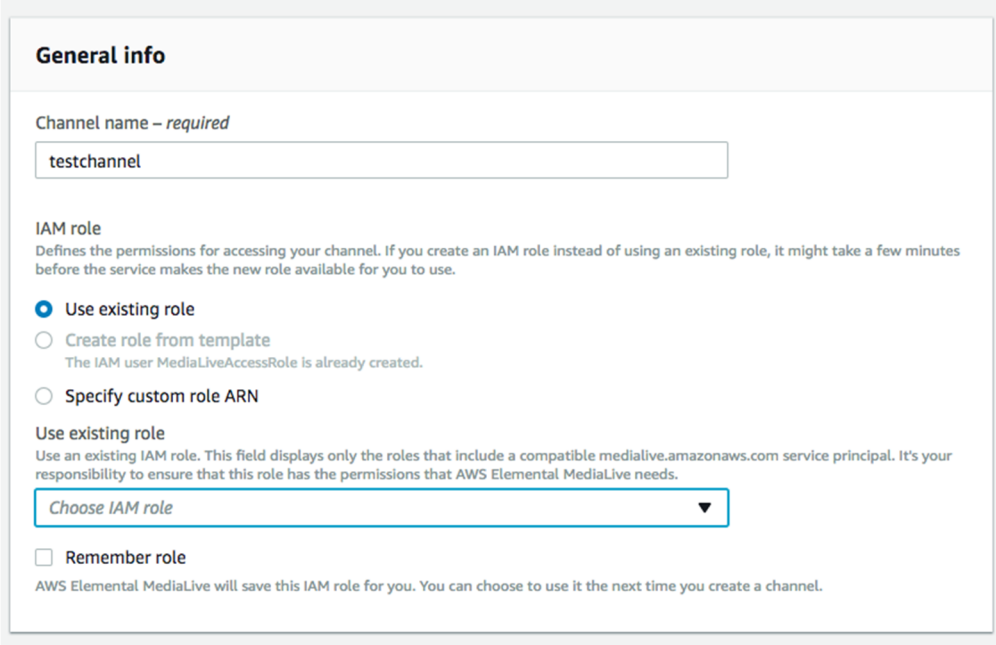
1. Launch OBS Studio on the source system. Choose **Settings** to open the settings window. Choose **Stream** to access the streaming settings.
2. Complete the fields:
    a. For **Stream Type**, choose **Custom Streaming Server**.
    b. For **URL**, copy one of the endpoint URLs from the input you created in Step B. Remove the
        i. /<stream_name> at the end of the URL.
    c. For **Stream key**, type the stream name.
    d. Leave the **Use authentication** box unchecked.
    e. Choose **Apply** to save your changes.



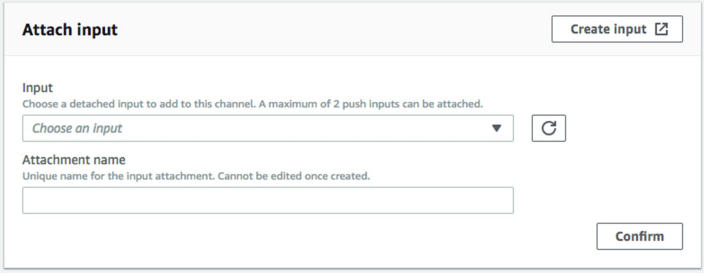
3. Choose **Output** from the left-hand menu and in **Output Mode**, choose **Advanced.**
4. Complete the Streaming tab:
    a. For the **Encoder**, choose **x264**.
    b. Select **Rescale Output** box and type 1**920x1080** in the drop-down (it's not a drop-down option, but you can enter it manually).
    c. Change **Bitrate** to **10000** (this assumes your uplink bandwidth is sufficient).
    d. Leave the remaining settings at their defaults.
    e. Choose **Apply** to save your changes.
5. Choose **Audio** from the left-hand menu and confirm that:
    a. **Sample rate** is **44.1 kHz**.
    b. **Channels** are set to **Stereo**.
    If you made changes, choose **Apply**.
6. Choose **Video** from the left-hand menu complete the fields:
    a. For **Base (Canvas) Resolution**, choose **1920x1080**.
    b. For **Output (Scaled) Resolution**, choose **1920x1080**.
    c. Choose **Fractional FPS Value** from the drop-down, and enter a **Numerator** of 30000 and a **Demoninator** of 1001
    Choose **Apply** to save your changes.
7. Choose **OK** to dismiss the settings window.

STEP D: CREATE A CHANNEL IN AWS ELEMENTAL MEDIALIVE

1. Switch back to the AWS Elemental MediaLive console.
2. From the left-hand column, choose **Channels**, then choose **Create channel**. The Create channel page appears.
3. For **Channel name**, type a meaningful identifier for the channel.
4. In the **Channel template** section at the bottom, choose **HTTP Live Streaming (MediaPackage)**. The Channel navigation panel shows:
    a. One output group named **MediaPackage group**
    b. Ten outputs that all belong to that output group.
5. In the IAM role section, take the appropriate action:
    a. If the **Create role from template** option is *enabled*, select that option and choose **Create IAM role**. This creates the role. Once you complete the creation process, the role is automatically selected from the **Use existing role** drop-down.
    b. If the **Create role from template** option is *grayed out*, select **Use existing role** and then select **MediaLiveAccessRole** from the dropdown.



6. Under **Channel class** choose **SINGLE_PIPELINE.**
7. Under **Input specifications**, choose the **Input codec** (**AVC** for our example settings**), Input resolution** (select **HD** for our example), and **Maximum input bitrate** (use **MAX_10_MBPS** in our example).
8. In the left-hand column, next to **Input attachments,** choose the **Add** button. The Attach input card appears to the right. Choose the input you created earlier from the drop-down and then choose **Confirm**. This shows additional options to configure the network input settings, which you can adjust if necessary for your particular source.



9. In the left-hand column, navigate to “output groups” and choose the group named **MediaPackage group.** The Output Group details appear to the right.
10. In the **MediaPackage destination** section, copy and paste the MediaPackage ID from the channel you created earlier.
11. Delete the captions output. This channel template includes a WebVTT captions output. Since we didn’t define a caption selector on the input, nor did we configure captions on the source appliance, we don’t need it. Navigate to the **MediaPackage outputs** section and choose the X to the right of Output 10 (_webvtt) to delete the captions output.
12. 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 E: START STREAMING THE VIDEO

You must start the event on the appliance and the AWS Elemental MediaLive channel in the correct order. This example uses RTMP, so you must start the AWS Elemental MediaLive channel *first*. If the channel is not in a **Running** state when you start the OBS stream, the handshake attempt from OBS to the channel fails.

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

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

STEP F: CLEANING UP

To avoid additional charges, it’s important to stop and delete all of the resources you used.

1. In the AWS Elemental MediaPackage console, choose the channel you created. From the **endpoints** section of the channel detail page, select the check-box beside any endpoints and choose **Delete.** If you chose to enable a CloudFront distribution when you created the channel, you need to disable and delete the distribution in the CloudFront console as well.
2. At the top right of the channel detail page, choose **Delete.**
3. **Stop** streaming from the OBS appliance.
4. In the AWS Elemental MediaLive console, under the channel listing, choose the radio button beside your channel, and then choose the **Stop** button.
5. Once the channel state has changed to **idle**, confirm the radio button is still selected, then from **Channel Actions** drop-down choose **Delete channel.**
6. From the **Inputs** section of the console, choose the radio button beside your input and then choose the **Delete** button from the top right.
7. From the **Input security group** section of the console, choose the radio button beside your input security group and then choose the **Delete** button from the top right.