

OBS Studio to AWS Elemental MediaLive to AWS
Elemental MediaPackage

Workflow Example



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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.

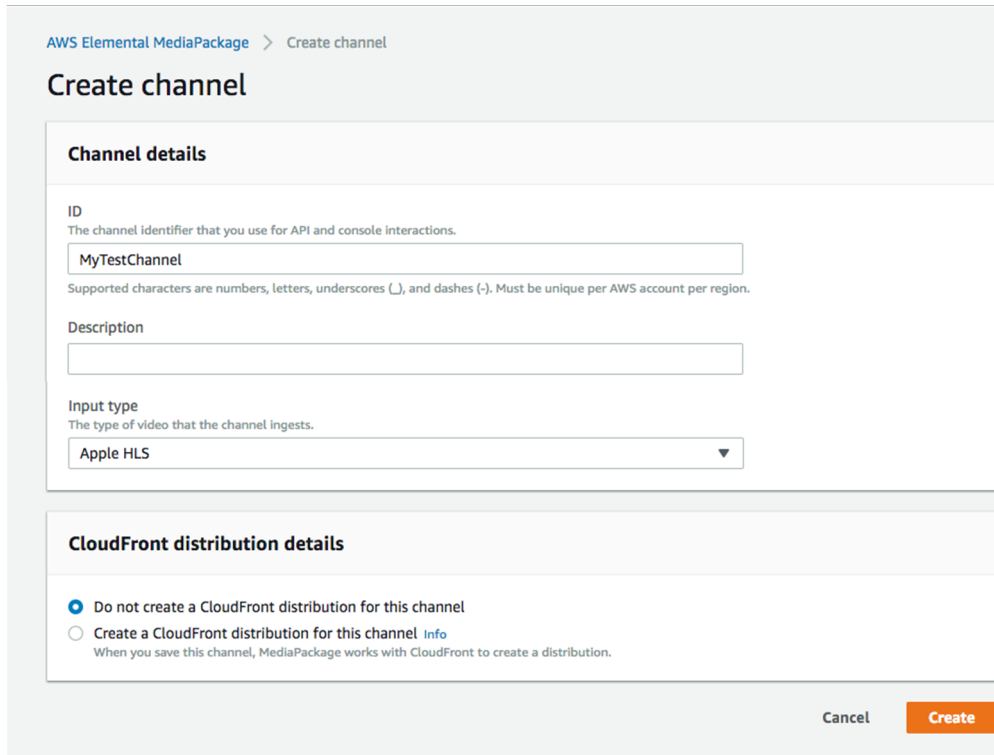
STEP A: CREATE A CHANNEL IN AWS ELEMENTAL MEDIAPACKAGE

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:



AWS Elemental MediaPackage > Create channel

Create channel

Channel details

ID
The channel identifier that you use for API and console interactions.

MyTestChannel

Supported characters are numbers, letters, underscores (_), and dashes (-). Must be unique per AWS account per region.

Description

Input type
The type of video that the channel ingests.

Apple HLS

CloudFront distribution details

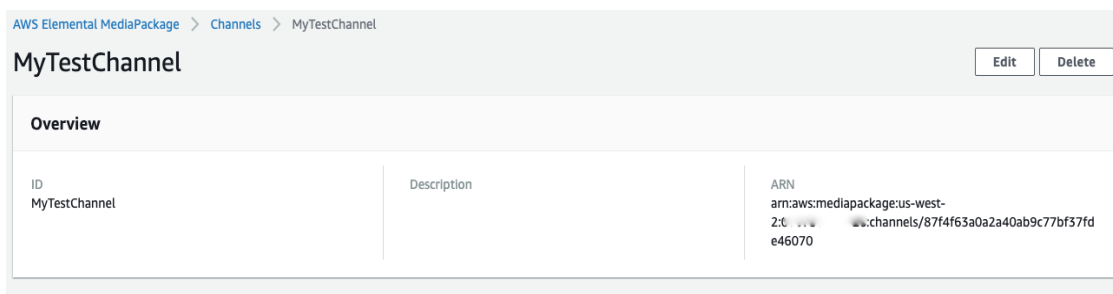
Do not create a CloudFront distribution for this channel

Create a CloudFront distribution for this channel [Info](#)

When you save this channel, MediaPackage works with CloudFront to create a distribution.

Cancel **Create**

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.



AWS Elemental MediaPackage > Channels > MyTestChannel

MyTestChannel

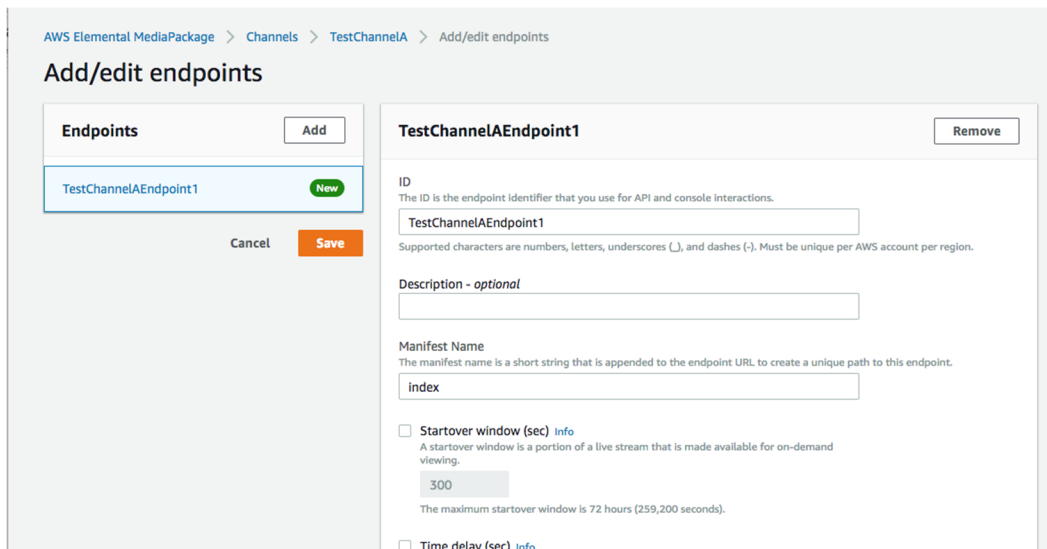
Edit Delete

Overview

ID	Description	ARN
MyTestChannel		arn:aws:mediapackage:us-west-2:61456789012:channels/87f4f63a0a2a40ab9c77bf37fd e46070

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

- 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.

- 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

- 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.
- Open the Input Listing page:
 - 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.

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

Input details

Input name – *required*

testinput1

Input type – *required*

- RTP**
Push your source to fixed endpoints with the real-time transport protocol.
- RTMP (push)**
Push your source to fixed endpoints with the real-time messaging protocol.
- RTMP (pull)**
Pull your source from external endpoints with the real-time messaging protocol.
- HLS**
Pull your source from external endpoints with the HTTP protocol.
- MP4**
Pull your source from external endpoints for MP4 files.
- MediaConnect**
Push your MediaConnect flow output to fixed endpoints using AWS Media services protocol

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

Input security group

Choose an input security group to use with your RTP or RTMP PUSH input type.

- Use existing**
Attach an existing input security group to your channel.
- Create**
Attach a new input security group to your channel.

New security group
Add CIDR-formatted strings to the new input security group, separated by commas or newlines

CIDR blocks to add
- None -

Create input security group

- 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.

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

Input security group

Choose an input security group to use with your RTP or RTMP PUSH input type.

Use existing
 Attach an existing input security group to your channel.

Create
 Attach a new input security group to your channel.

Use existing

Choose an existing input security group.

Input Security Group 1
7039827 ▼

1 CIDR block
192.168.0.0/24

- 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.

Input destinations

For RTMP PUSH inputs, you must specify two destination application names and instances.

Channel class

Select the class of channel you intend to attach this input to. STANDARD inputs are compatible with both STANDARD and SINGLE_PIPELINE channels.

SINGLE_PIPELINE
▼

Destination	Application name and instance	
Destination A	live	mystream
Destination B	<i>Application name</i>	<i>Application instance</i>

- Choose **Create**. The new input appears in the list of inputs.
- 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.

Details

<p>ID</p> <p>241599</p> <p>Name</p> <p>MyRtmpInput</p> <p>State</p> <p>Detached</p> <p>Attached channels</p>	<p>ARN</p> <p>arn:aws:medialiv</p> <p>Type</p> <p>RTMP_PUSH</p>
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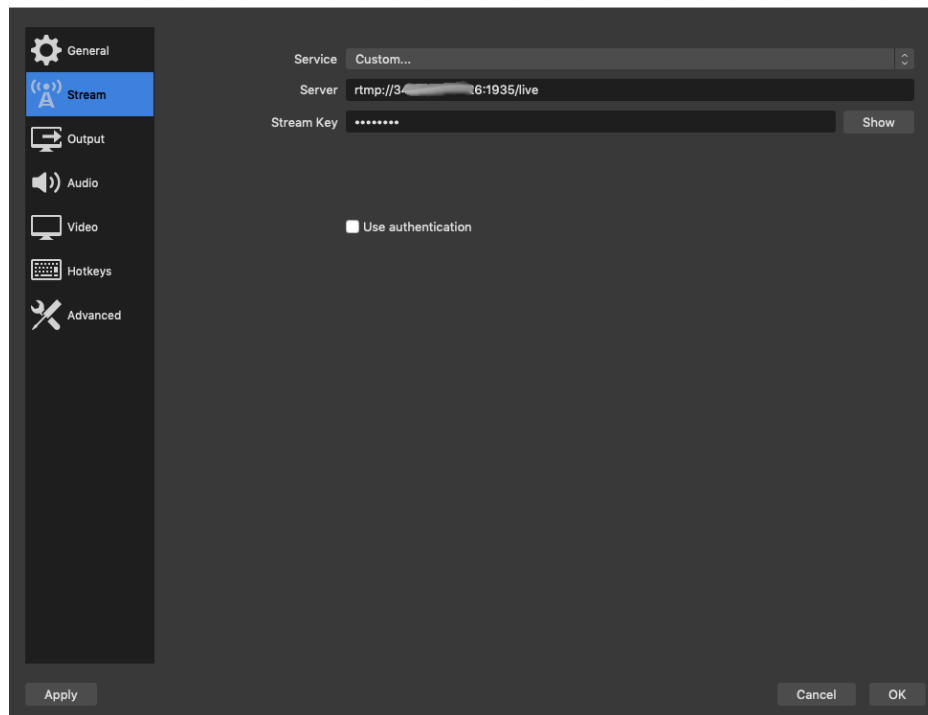
Endpoints (1)

URL
rtmp://3...:1935/live/mystream

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

STEP C: CONFIGURE THE APPLIANCE

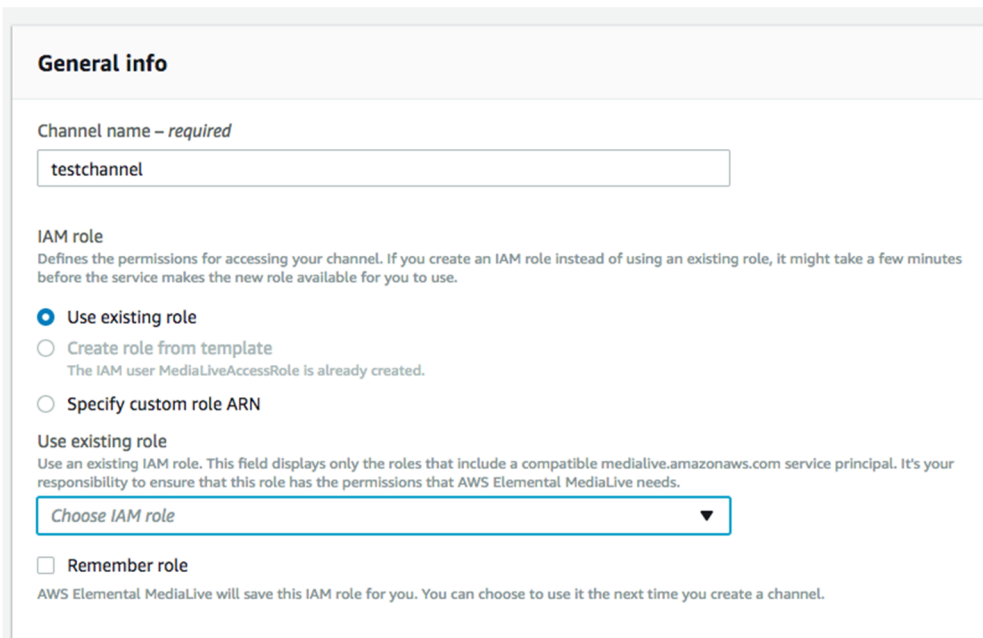
1. Launch OBS Studio on the source system. Choose **Settings** to open the settings window. Choose **Stream** to access the streaming settings.
2. Complete the fields:
 - a. For **Stream Type**, choose **Custom Streaming Server**.
 - b. For **URL**, copy one of the endpoint URLs from the input you created 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 **1920x1080** 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.



General info

Channel name – *required*

testchannel

IAM role
Defines the permissions for accessing your channel. If you create an IAM role instead of using an existing role, it might take a few minutes before the service makes the new role available for you to use.

Use existing role

Create role from template
The IAM user MediaLiveAccessRole is already created.

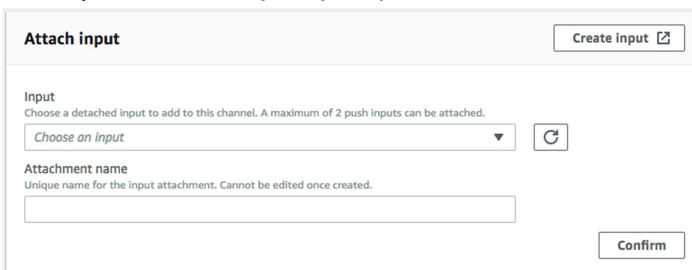
Specify custom role ARN

Use existing role
Use an existing IAM role. This field displays only the roles that include a compatible medialive.amazonaws.com service principal. It's your responsibility to ensure that this role has the permissions that AWS Elemental MediaLive needs.

Choose IAM role

Remember role
AWS Elemental MediaLive will save this IAM role for you. You can choose to use it the next time you create a channel.

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.



Attach input [Create input](#)

Input
Choose a detached input to add to this channel. A maximum of 2 push inputs can be attached.

Choose an input

Attachment name
Unique name for the input attachment. Cannot be edited once created.

Confirm

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.