

# **EZDRM Configuration AWS SPEKE 2.0 for MediaLive and MediaPackage**

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## Prerequisites

Installation of AWS Command Line Interface (CLI) pip install is required prior to configuration. Python 3.6 or higher is required.

For more information on requirements set up, visit this link in a browser:  
<https://docs.aws.amazon.com/cli/latest/userguide/installing.html>

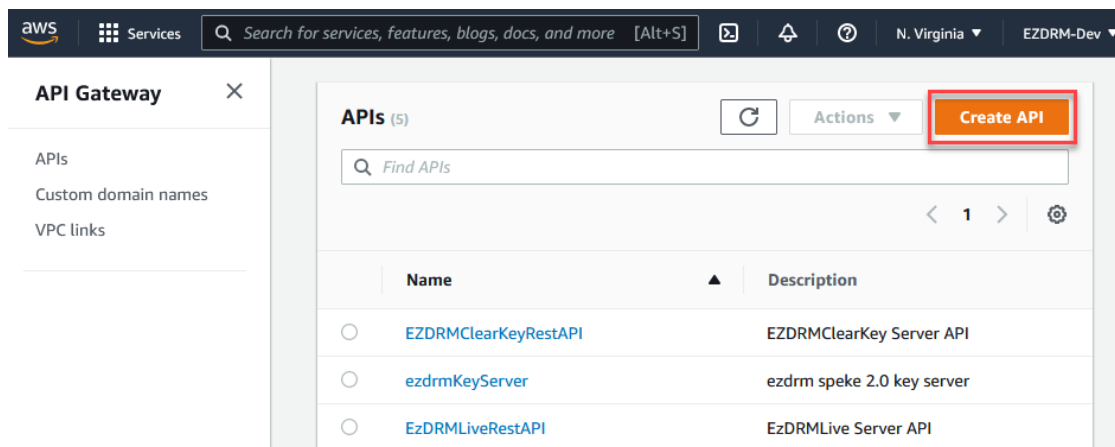
To download Python 3.6: <https://www.python.org/downloads/>

## STEP 1 - EZDRM AWS Speke 2.0 Server Deployment

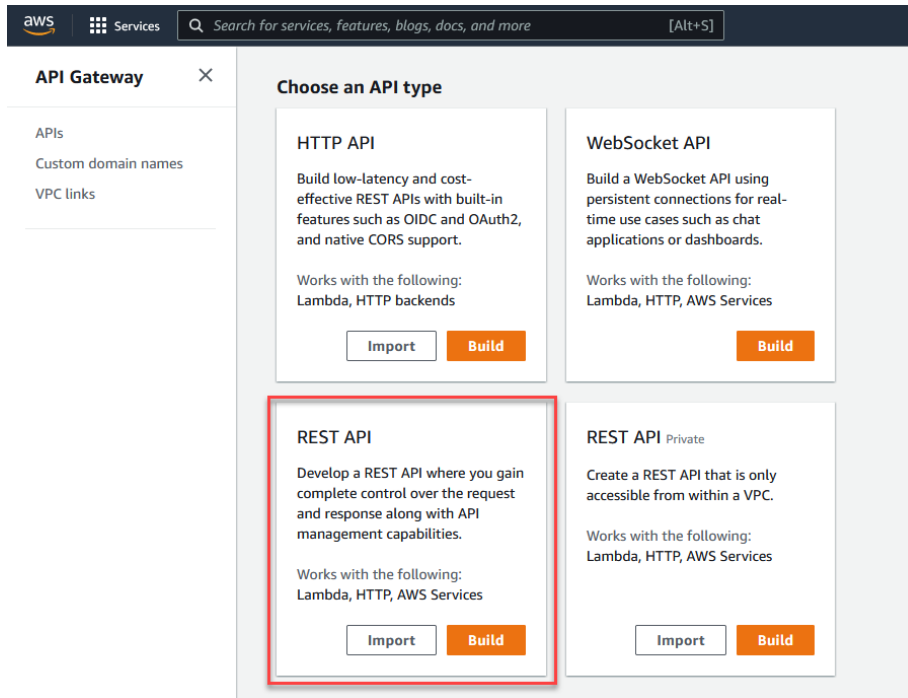
We will utilize AWS SPEKE 2.0 to support their multi-key infrastructure.

### Create API

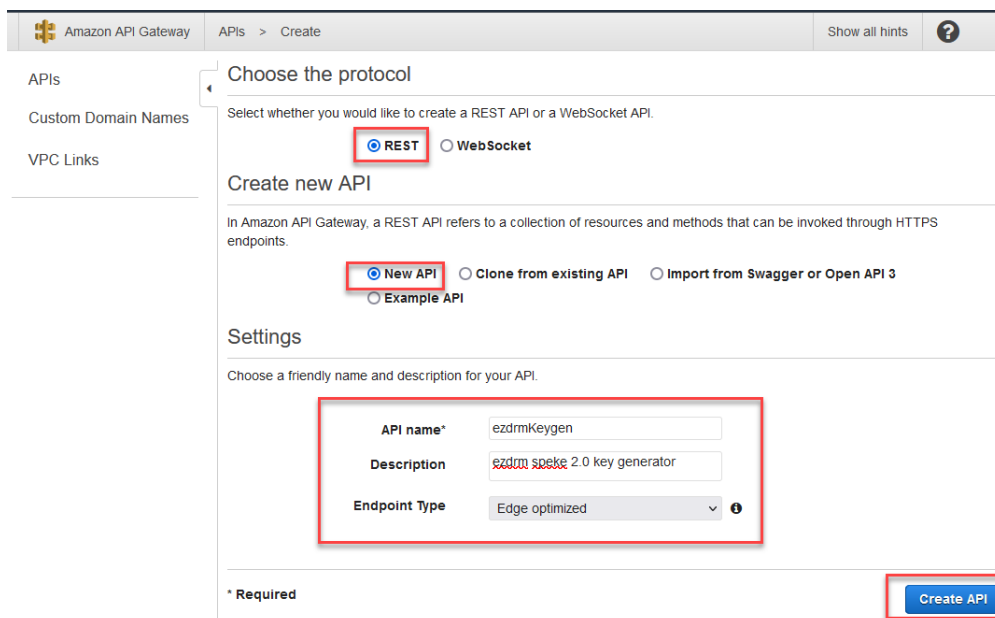
1. Under API Gateway click **Create API**.



2. Build a **REST API** by clicking the **Build** button.



3. Select **REST** protocol, and under Create new API select **New API**. Enter the **API name**, **Description** and select the **Endpoint Type – Edge Optimized**. Edge Optimized allows the endpoint to be geo-balanced.

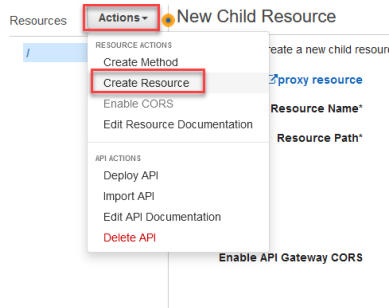


4. Click **Create API**.



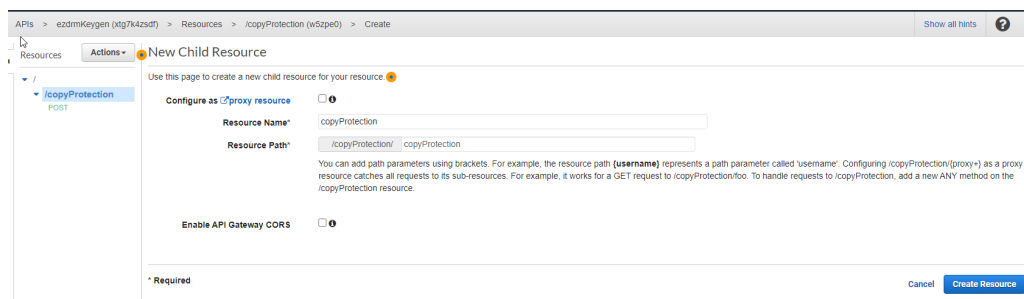
## Create API Resource

- Under Resources **Actions** menu, select **Create Resource**.



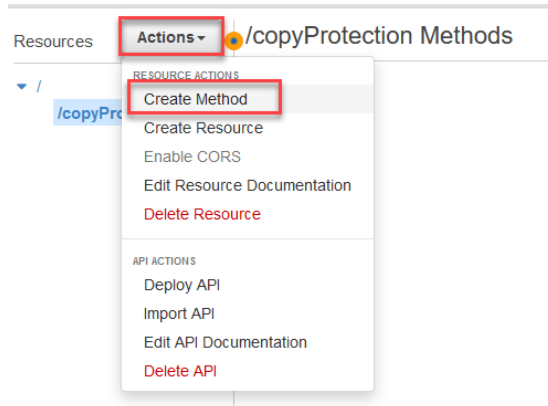
- Leave **Configure as proxy resource** unchecked. Enter **Resource Name**, we recommend **copyProtection** (case sensitive). Leave **Enable API Gateway CORS** unchecked.

- Click **Create Resource**.



## Create Method

- Under Resources **Actions** menu, select **Create Method**.



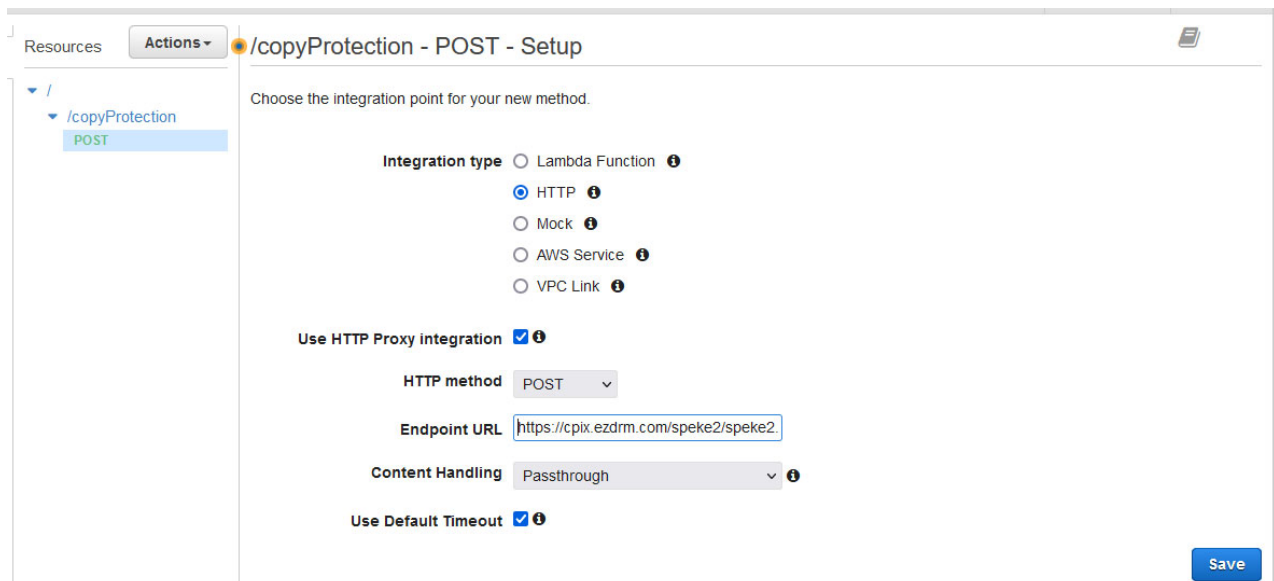
9. The Method type is **POST**.



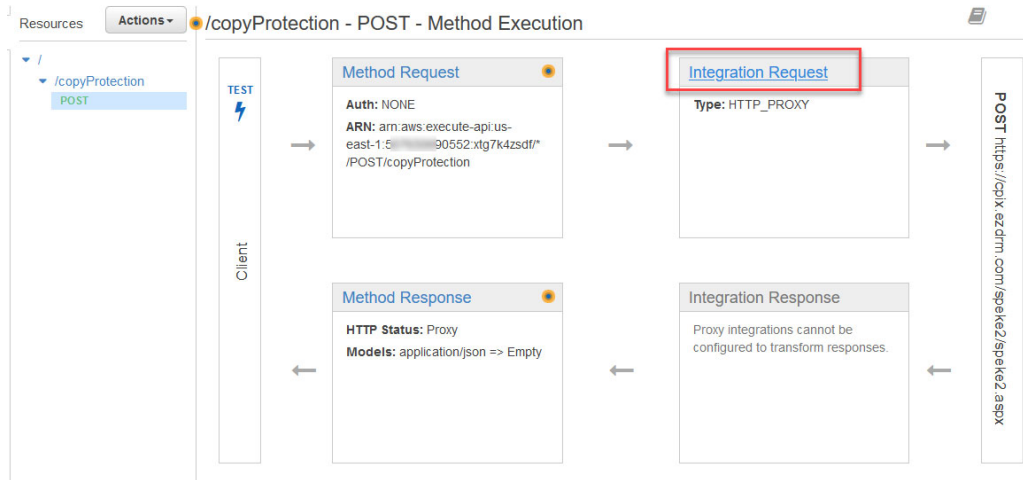
10. Under **Integration Type** select **HTTP**. Select the checkbox for **Use HTTP Proxy Integration**. HTTP Method is **POST**. The **Endpoint URL** is <https://cpix.ezdrm.com/speke2/speke2.aspx>

11. **Content Handling** is **Passthrough**. Select **Use Default Timeout**.

12. Click **Save**.

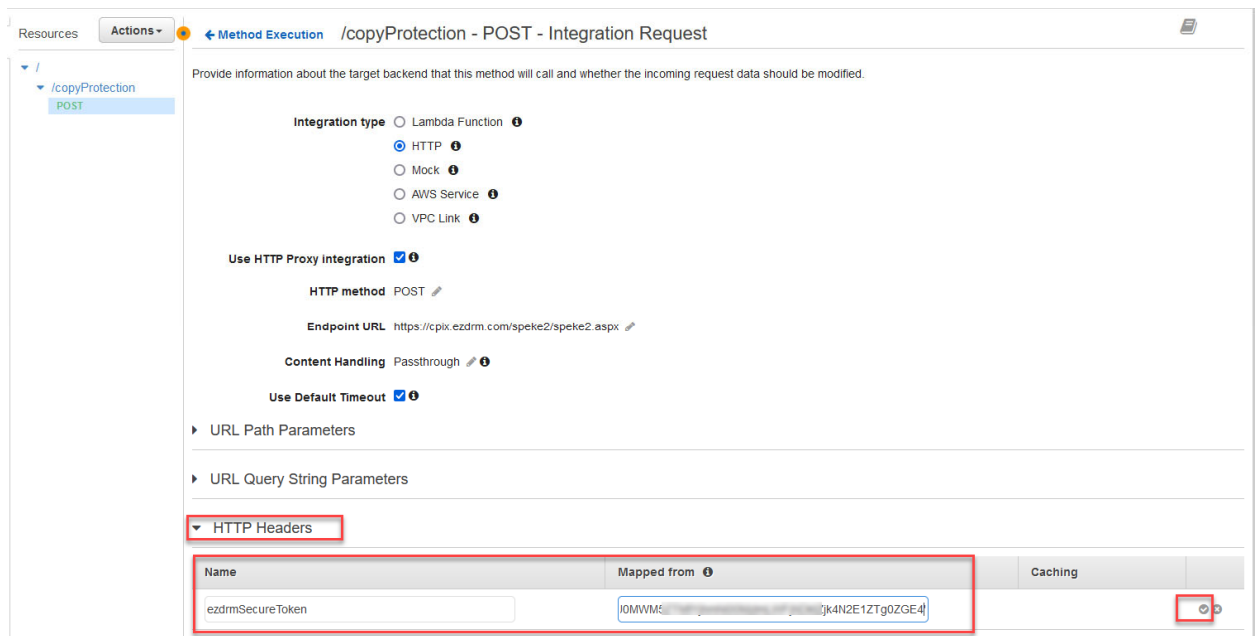


13. Next, select **Integration Request** link.



## Integration Request

14. Specify an **HTTP Header**, this is how access to the endpoint is validated with EZDRM.
15. Enter a **Name**, for this example we suggest **ezdrmSecureToken** (case insensitive).
16. Enter the **ezdrmSecureToken** provided through your EZDRM admin portal in the **Mapped From** field in single quotes (see example).
17. Click **checkmark** to save.



Resources Actions ▾ /copyProtection - POST - Method Execution

TEST ⚡

Client

Method Request

Auth: NONE  
ARN: arn:aws:execute-api:us-east-1:590552:xtg7k4zsd/\* /POST/copyProtection

Integration Request

Type: HTTP\_PROXY

POST https://cpix.ezdrm.com/speke2/speke2.aspx

Method Response

HTTP Status: Proxy  
Models: application/json => Empty

Integration Response

Proxy integrations cannot be configured to transform responses.

←

Method Execution /copyProtection - POST - Integration Request

Provide information about the target backend that this method will call and whether the incoming request data should be modified.

Integration type ☐ Lambda Function ⓘ ☒ HTTP ⓘ ☐ Mock ⓘ ☐ AWS Service ⓘ ☐ VPC Link ⓘ

Use HTTP Proxy Integration ☒ ⓘ

HTTP method POST ↗

Endpoint URL https://cpix.ezdrm.com/speke2/speke2.aspx ↗

Content Handling Passthrough ↗ ⓘ

Use Default Timeout ☒ ⓘ

▶ URL Path Parameters

▶ URL Query String Parameters

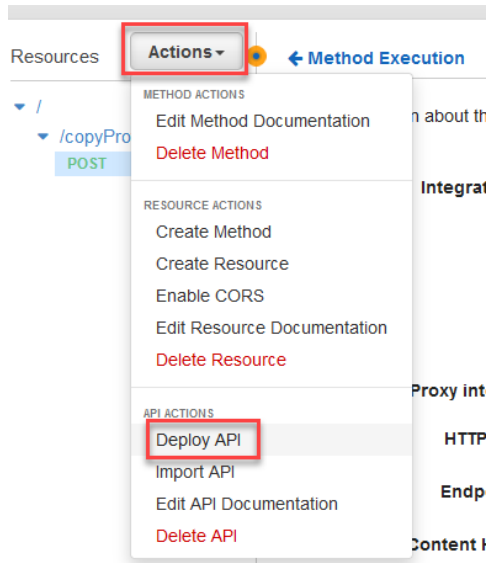
▼ HTTP Headers

| Name             | Mapped from ⓘ                 | Caching |
|------------------|-------------------------------|---------|
| ezdrmSecureToken | ["jOMWMM5..."]k4N2E1ZTg0ZGE4[ |         |

⊕

## Deploy API

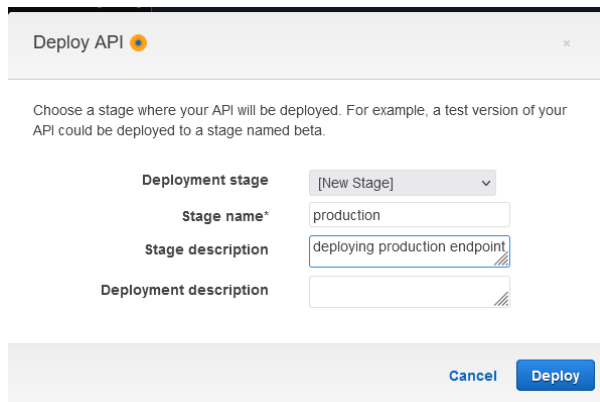
18. Select **Deploy API** from the Actions menu.



19. Select **[New Stage]** under **Stage Name**.

20. Enter the **Stage Name**. This name is used as part of the API URL to identify the version of the API. For example, you can name based on a test or stage version, as well as production, etc. For our example we used “production”.

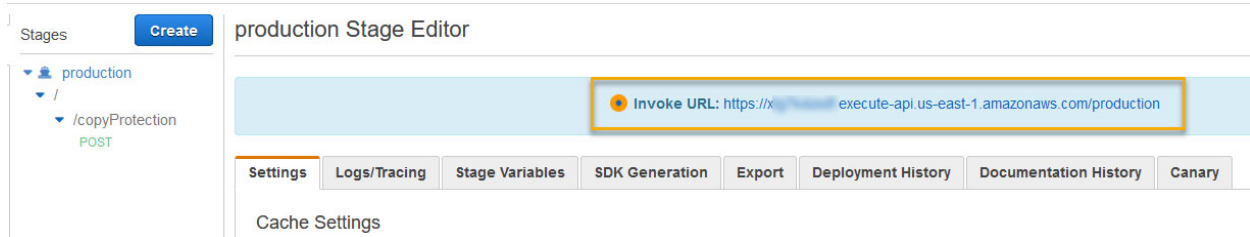
21. The **Stage Description** can be used to notate the version of the API. For this example, we used “deploying production endpoint”.



The screenshot shows the 'Deploy API' dialog box. It has a title bar that says 'Deploy API' with a close button. Below the title bar, there is a text area with the instruction: 'Choose a stage where your API will be deployed. For example, a test version of your API could be deployed to a stage named beta.' Below this, there are four input fields: 'Deployment stage' (a dropdown menu with '[New Stage]' selected), 'Stage name\*' (a text input field with 'production' entered), 'Stage description' (a text input field with 'deploying production endpoint' entered), and 'Deployment description' (an empty text input field). At the bottom right, there are two buttons: 'Cancel' and 'Deploy'.

22. Click **Deploy**.

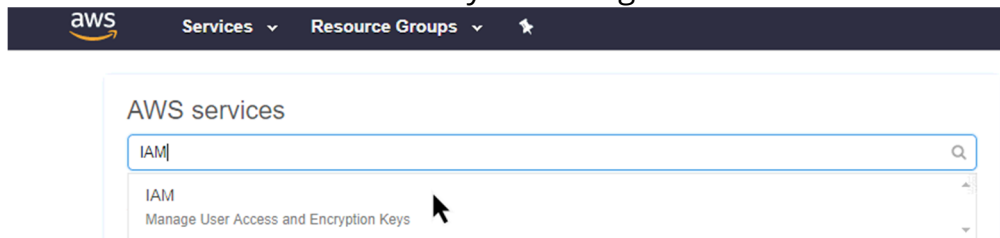
23. You will copy the **API URL** at the top of the Editor page labeled **Invoke URL**.  
Paste this URL in a notepad for editing in a future step.



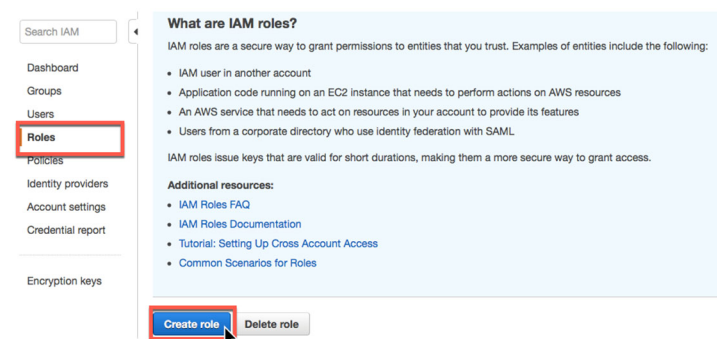
## STEP 2 - Create Role – MediaPackage

To create a the MediaPackage Role in AWS complete the following steps:

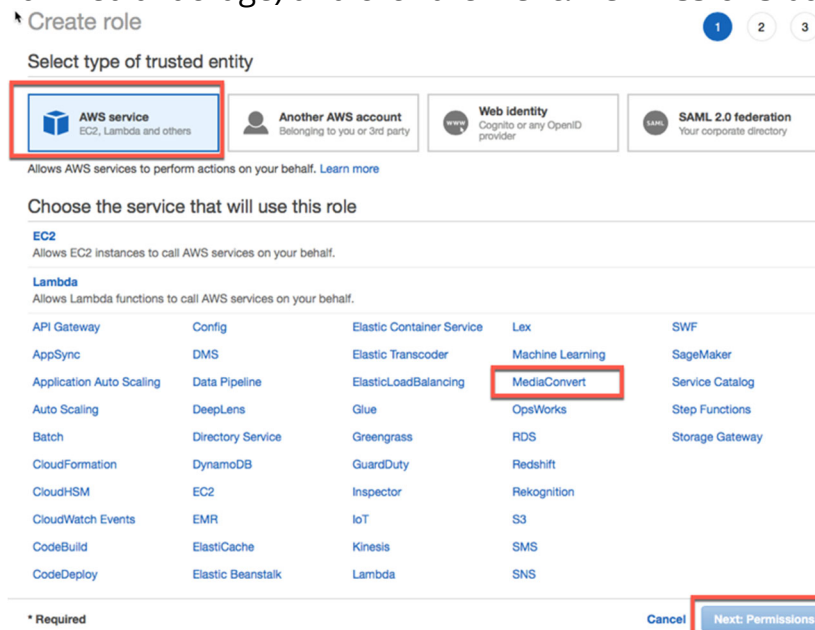
1. Launch the AWS IAM console by searching for IAM.



2. Go to the Roles menu. Click the **Add role** button.



3. Under AWS service select the **MediaConvert** role (there isn't currently a role for MediaPackage) and click the **Next: Permissions** button.



- Enter the **Role name** and click the **Create role** button.

#### Create role

1 2 3

#### Review

Provide the required information below and review this role before you create it.

**Role name\***



Use alphanumeric and '+', '@', '-' characters. Maximum 64 characters.

**Role description**

Maximum 1000 characters. Use alphanumeric and '+', '@', '-' characters.

**Trusted entities**
 AWS service: mediaconvert.amazonaws.com

**Policies**

-  [AmazonS3FullAccess](#)
-  [AmazonAPIGatewayInvokeFullAccess](#)

\* Required

[Cancel](#)

[Previous](#)

[Create role](#)

- Now that the MediaPackage role is created, click on the link to open the role details.

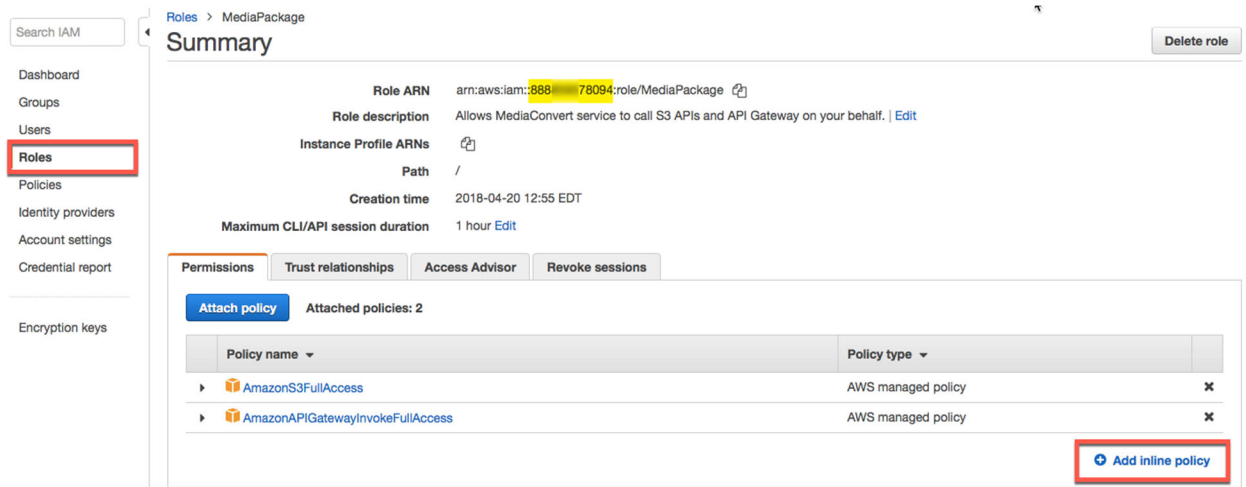
[Create role](#)
[Delete role](#)

Dashboard
Groups
Users
**Roles**
Policies
Identity providers
Account settings
Credential report
Encryption keys

| Role name  | Description   | Trusted entities                 |
|--|---|----------------------------------|
| <input type="checkbox"/> <a href="#">EZDRM</a>               | Allows MediaConvert service to call S3 APIs and API Gateway on your behalf. | <b>AWS service:</b> mediaconvert |
| <input type="checkbox"/> <a href="#">MediaLiveAccessRole</a> | AWS Elemental MediaLive created the role.                                   | <b>AWS service:</b> medialive    |
| <input type="checkbox"/> <a href="#">MediaPackage</a>        | Allows MediaConvert service to call S3 APIs and API Gateway on your behalf. | <b>AWS service:</b> mediapackage |

- Because a role doesn't exist for MediaPackage, you will need to add an inline policy and change the settings of these role. This gives permission to execute the copy protection.

First, note your **AWS Account ID** as part of the **Role ARN** value (you can also find this value under the My Account menu under Account Settings). Click the link to **Add inline policy**.



Search IAM

Dashboard  
Groups  
Users  
**Roles**  
Policies  
Identity providers  
Account settings  
Credential report  
Encryption keys

Roles > MediaPackage

**Summary** Delete role

**Role ARN** `arn:aws:iam::888-78094:role/MediaPackage` [Copy](#)

**Role description** Allows MediaConvert service to call S3 APIs and API Gateway on your behalf. | [Edit](#)

**Instance Profile ARNs** [Copy](#)

**Path** /

**Creation time** 2018-04-20 12:55 EDT

**Maximum CLI/API session duration** 1 hour [Edit](#)

**Permissions** **Trust relationships** **Access Advisor** **Revoke sessions**

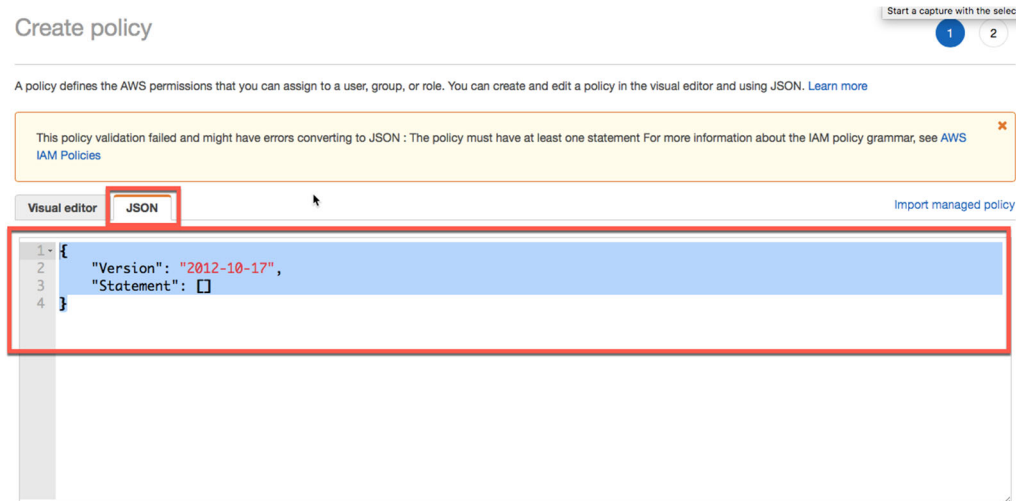
[Attach policy](#) Attached policies: 2

| Policy name                                      | Policy type        |                   |
|--|--------------------|-------------------|
| <a href="#">AmazonS3FullAccess</a>               | AWS managed policy | <a href="#">✕</a> |
| <a href="#">AmazonAPIGatewayInvokeFullAccess</a> | AWS managed policy | <a href="#">✕</a> |

[Add inline policy](#)



7. Next select the **JSON** tab and replace with the following code:



Create policy

A policy defines the AWS permissions that you can assign to a user, group, or role. You can create and edit a policy in the visual editor and using JSON. [Learn more](#)

This policy validation failed and might have errors converting to JSON : The policy must have at least one statement For more information about the IAM policy grammar, see [AWS IAM Policies](#)

Visual editor **JSON** Import managed policy

```
1 {
2   "Version": "2012-10-17",
3   "Statement": [
4     ]
5 }
```

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "execute-api:Invoke"
      ],
      "Resource": [
        "arn:aws:execute-api:us-east-1:888XXXX78094:09puxkvybd/*/*/*/*/*",
        "arn:aws:execute-api:us-east-1:888XXXX78094:09puxkvybd/*/*/*/*/*"
      ]
    }
  ]
}
```

The yellow highlighted value is your **AWS Account ID**, the purple highlighted value is from the **EZDRM SPEKE 2.0 API Invoke URL** created in Step 1 (this value would change if you redeploy the Speke server).



production Stage Editor

Invoke URL: <https://x-xxxxx.execute-api.us-east-1.amazonaws.com/production>

Settings Logs/Tracing Stage Variables SDK Generation Export Deployment History Documentation History Canary

Cache Settings

- Once you've entered the correct code in the JSON tab, click the **Review policy** button.

## Create policy

1

2

A policy defines the AWS permissions that you can assign to a user, group, or role. You can create and edit a policy in the visual editor and using JSON. [Learn more](#)

This policy validation failed and might have errors converting to JSON : The policy must have at least one statement For more information about the IAM policy grammar, see [AWS IAM Policies](#)

Visual editor

JSON

[Import managed policy](#)

```

1 {
2   "Version": "2012-10-17",
3   "Statement": [
4     {
5       "Effect": "Allow",
6       "Action": [
7         "execute-api:Invoke"
8       ],
9       "Resource": [
10        "arn:aws:execute-api:us-east-1:888859578094:09puxkvybd/*/GET/client/*/*",
11        "arn:aws:execute-api:us-east-1:888859578094:09puxkvybd/*/POST/copyProtection"
12      ]
13    }
14  ]
15 }
```

[Cancel](#)

[Review policy](#)

- On the Review policy page, fill in the policy **Name** and click **Create policy**.

## Create policy

1

2

### Review policy

Before you create this policy, provide the required information and review this policy.

Name\*

Maximum 128 characters. Use alphanumeric and "+,=,@,-" characters.

#### Summary

| Service  | Access level   | Resource | Request condition |
|--|----------------|----------|-------------------|
| Allow (1 of 136 services) <a href="#">Show remaining 135</a> |                |          |                   |
| ExecuteAPI   | Limited: Write | Multiple | None              |

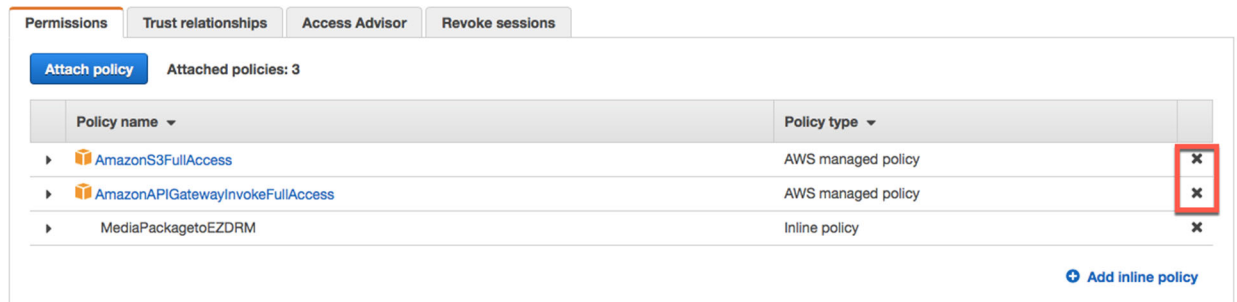
\* Required

[Cancel](#)

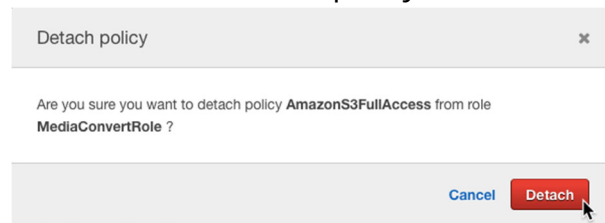
[Previous](#)

[Create policy](#)

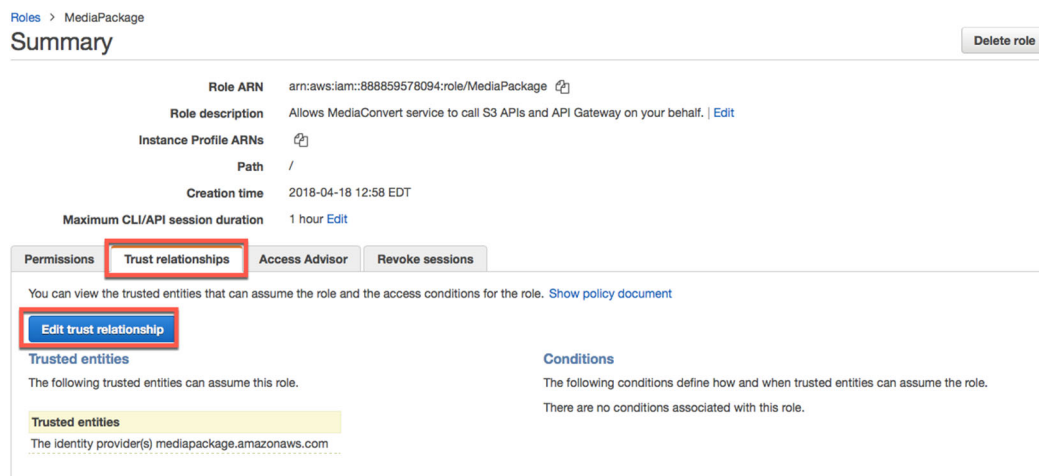
10. Now you will detach the two default policies from the role by clicking the “x” next to **AmazonS3FullAccess** and **AmazonAPIGatewayInvokeFullAccess**.



Click **Detach** on the Detach policy confirmation screen for both.



11. Then click on the **Trust relationships** tab and click the **Edit trust relationship** button.



12. Edit line 8 from “mediaconvert.amazonaws.com” to  
**“mediapackage.amazonaws.com”** and click the **Update trust policy**  
 button.

### Edit Trust Relationship

You can customize trust relationships by editing the following access control policy document.

#### Policy Document

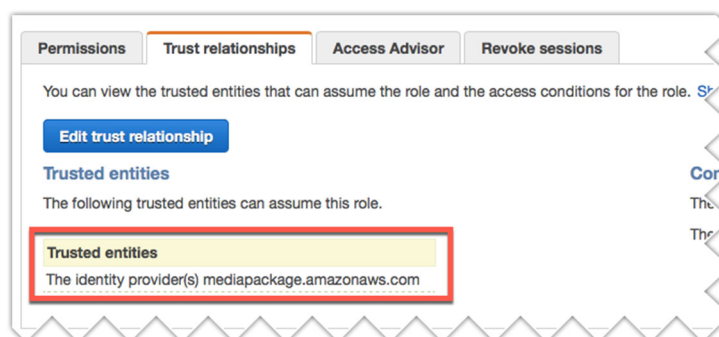
```

1 {
2   "Version": "2012-10-17",
3   "Statement": [
4     {
5       "Sid": "",
6       "Effect": "Allow",
7       "Principal": {
8         "Service": "mediapackage.amazonaws.com"
9       },
10      "Action": "sts:AssumeRole"
11    }
12  ]
13 }
```

Cancel

Update Trust Policy

The Trust relationships tab should be updated as follows:



Permissions Trust relationships Access Advisor Revoke sessions

You can view the trusted entities that can assume the role and the access conditions for the role. [Show](#)

[Edit trust relationship](#)

**Trusted entities**

The following trusted entities can assume this role.



**Trusted entities**

The identity provider(s) mediapackage.amazonaws.com

13. Once the MediaPackage role is created, make note of the **Role ARN** value for use in a later step. You can copy this value using the doc copy shortcut.

[Roles](#) > MediaPackage

**Summary** Delete role

|                                  |  |
|----------------------------------|--|
| Role ARN                         | arn:aws:iam::888-78094:role/MediaPackage  |
| Role description                 | Allows MediaConvert service to call S3 APIs and API Gateway on your behalf. <a href="#">Edit</a>                           |
| Instance Profile ARNs            |   |
| Path                             | /  |
| Creation time                    | 2018-04-18 12:58 EDT   |
| Maximum CLI/API session duration | 1 hour <a href="#">Edit</a>  |

[Permissions](#)
[Trust relationships](#)
[Access Advisor](#)
[Revoke sessions](#)

[Attach policy](#) Attached policies: 1

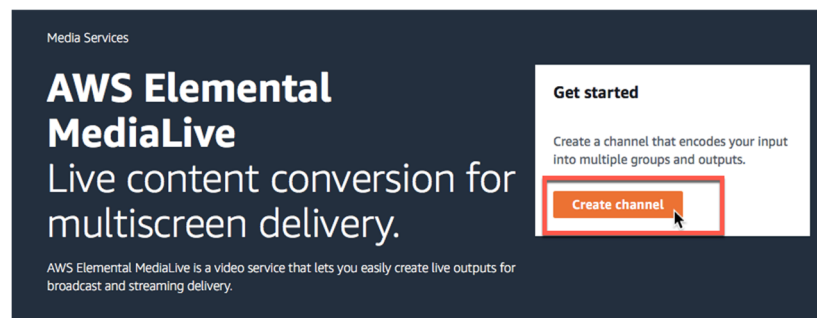
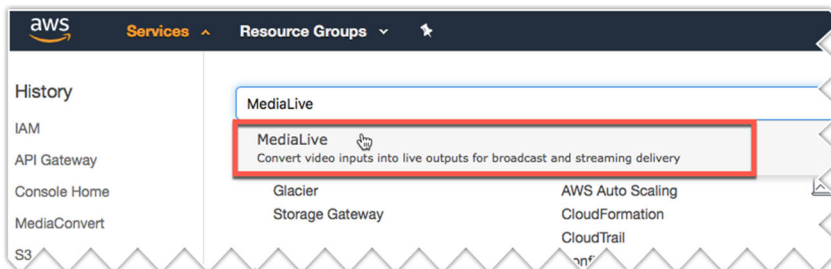
| Policy name         | Policy type   |
|---------------------|---------------|
| MediaPackagetoEZDRM | Inline policy |

[+ Add inline policy](#)

## STEP 3 - Creating an AWS MediaLive & MediaPackage Job

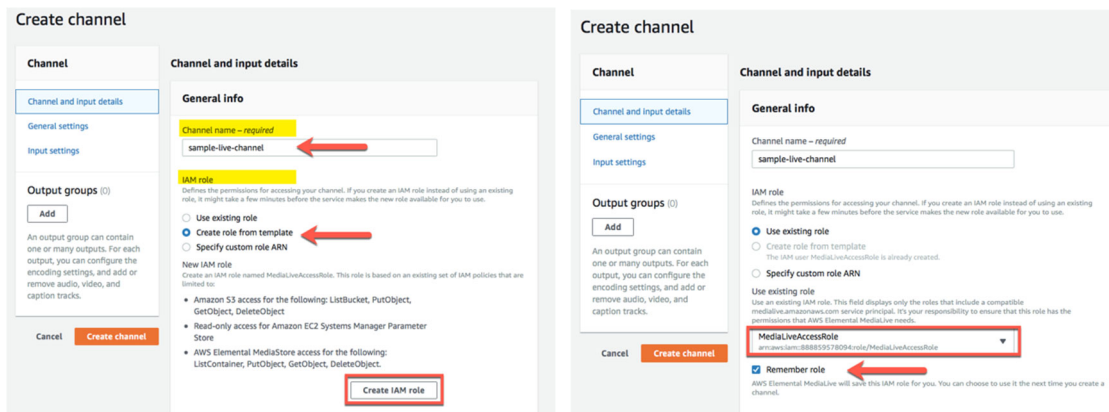
### Create a Channel in MediaLive

1. Through **AWS Services** go to **MediaLive** and under **Get Started**, click **Create Channel**.



### Channel and Input Details

2. The channel is the input for your live broadcast. Enter the **Channel Name** (this is a required value).
3. Under **IAM Role**, the first time you create a channel, you can select **Create Role from Template** and click **Create IAM role**. The **MediaLiveAccessRole** will be created. You can select to **Remember role** and it will be available as the existing role for future channels.



**Create channel**

**Channel and input details**

**General info**

Channel name – required  
sample-live-channel

**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  
☐ Specify custom role ARN

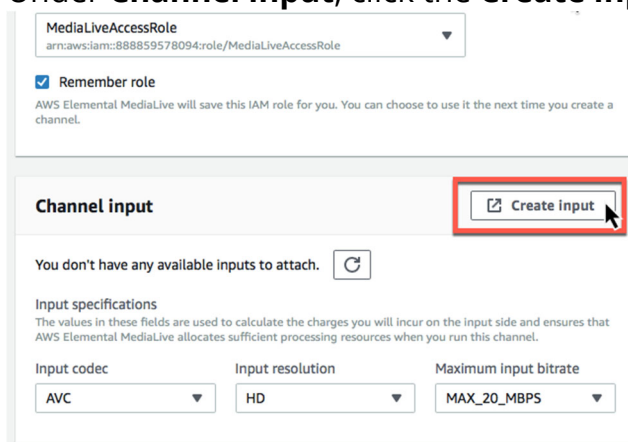
**New IAM role**  
Create an IAM role named MediaLiveAccessRole. This role is based on an existing set of IAM policies that are limited to:

- Amazon S3 access for the following: ListBucket, PutObject, GetObject, DeleteObject
- Read-only access for Amazon EC2 Systems Manager Parameter Store
- AWS Elemental MediaStore access for the following: ListContainer, PutObject, GetObject, DeleteObject.

**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.

**Create channel**

#### 4. Under **Channel input**, click the **Create input** button.



**MediaLiveAccessRole**  
arn:aws:iam::888859578094:role/MediaLiveAccessRole

☒ **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.

**Channel input**

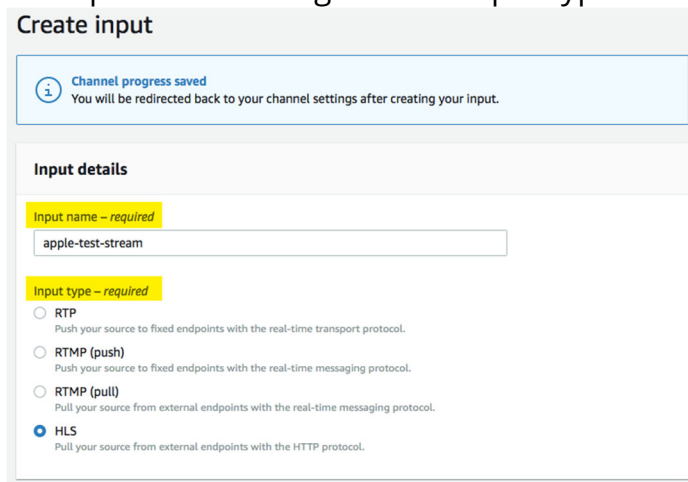
**Create input**

You don't have any available inputs to attach.

**Input specifications**  
The values in these fields are used to calculate the charges you will incur on the input side and ensures that AWS Elemental MediaLive allocates sufficient processing resources when you run this channel.

Input codec: AVC  
Input resolution: HD  
Maximum input bitrate: MAX\_20\_MBPS

#### 5. This will pull the source and type of stream pushing up to **MediaLive**, for this example we are using the HLS input type.



**Create input**

**Channel progress saved**  
You will be redirected back to your channel settings after creating your input.

**Input details**

Input name – required  
apple-test-stream

Input type – required

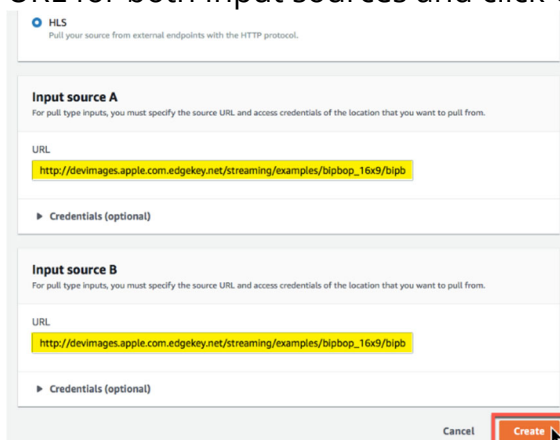
☐ RTP  
Push your source to fixed endpoints with the real-time transport protocol.

☐ RTMP (push)  
Push your source to fixed endpoints with the real-time messaging protocol.

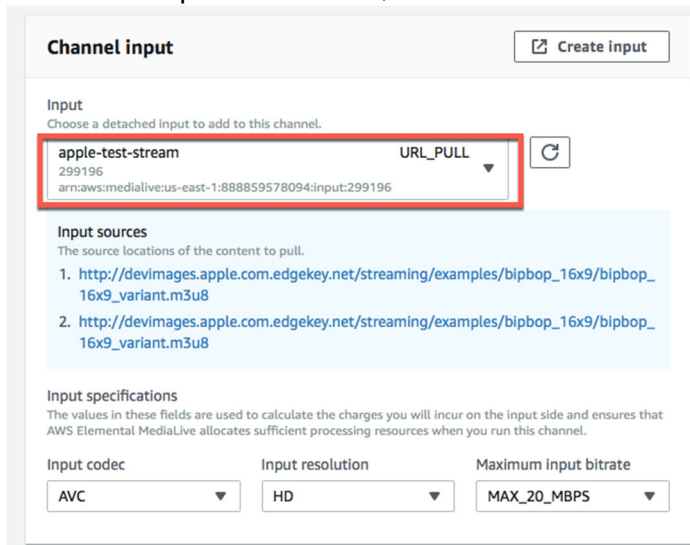
☐ RTMP (pull)  
Pull your source from external endpoints with the real-time messaging protocol.

☒ **HLS**  
Pull your source from external endpoints with the HTTP protocol.

6. Channel **Input source A** and **Input source B** will be the same for redundancy. For this example, we are using a publically available HLS stream provided by Apple for testing. You will enter your encoders publishing point URL for both Input sources and click **Create** button.



7. Once the Input is created, it can be selected from the Input dropdown menu.

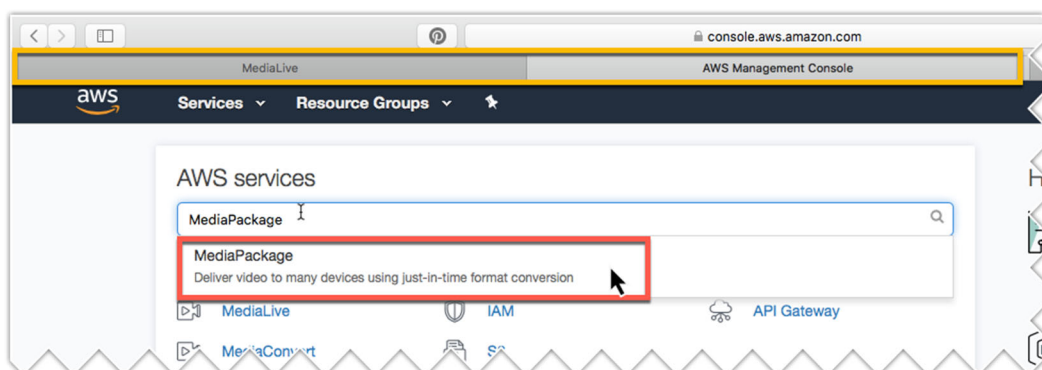


## Create Channels in MediaPackage

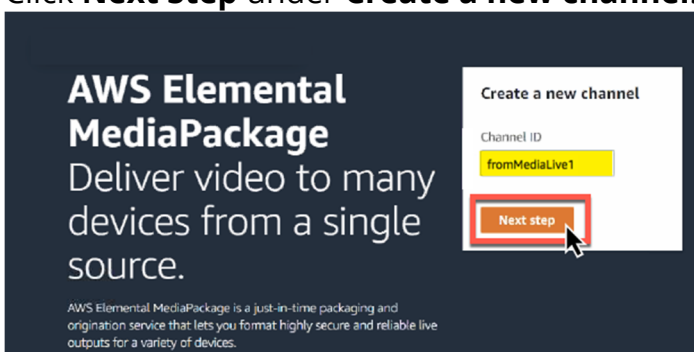
8. The next step is to create a new channel in **MediaPackage** to ingest the stream that is coming from MediaLive.

**Note:** It is helpful to have multiple tabs open during this process, for ease of copying settings between MediaLive and MediaPackage.

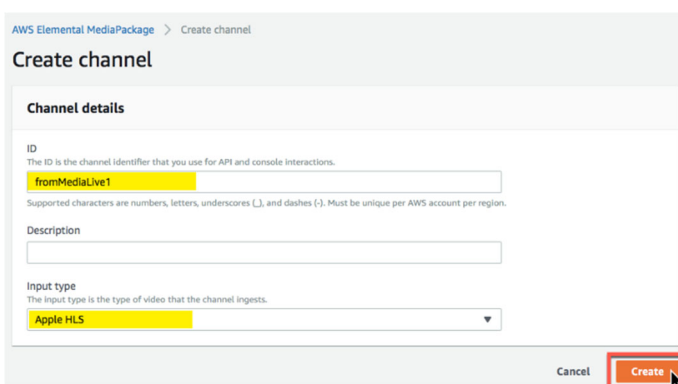




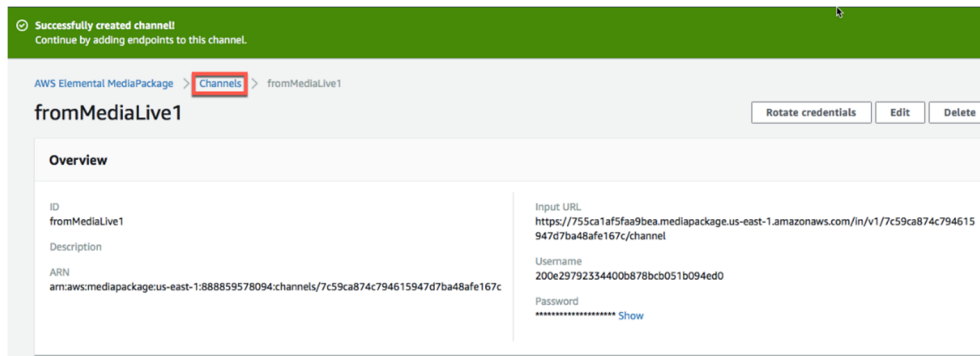
9. Click **Next Step** under **Create a new channel**.



10. Enter the Channel details including the **ID** channel identifier and select the **Input type "Apple HLS"** (this is the only supported type). Click **Create**.



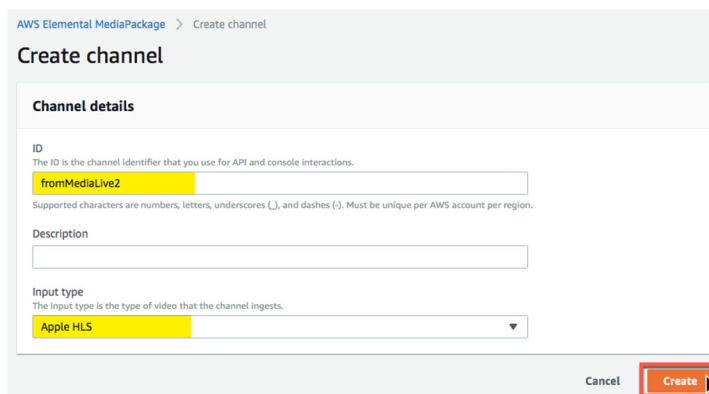
11. This will create the MediaPackage channel. For redundancy, a second channel will need to be created. Select **Channels**.




12. Click create on the **Channels** page and click the **Create** button to create the second redundant channel.



13. Enter the **Channel details** and click **Create**.



14. Now we have the URL and Channel details we will need for the Output Groups in MediaLive.



AWS Elemental MediaPackage > Channels

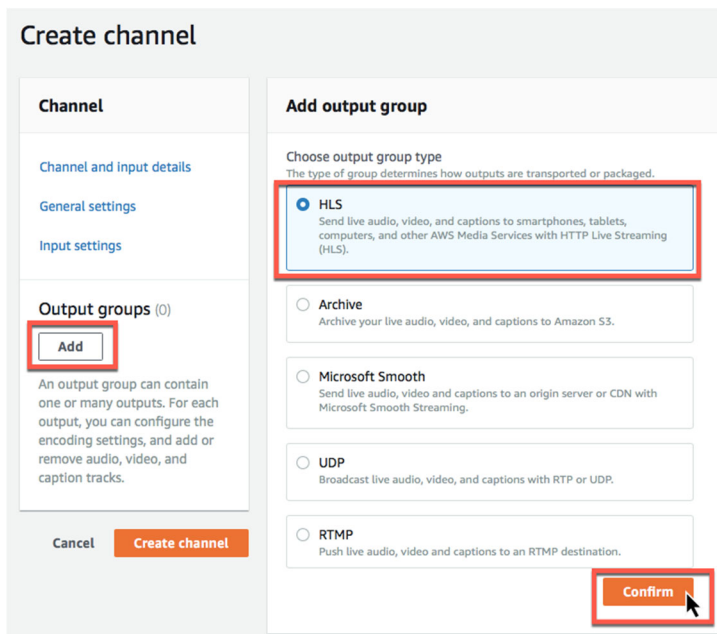
Channels Delete Create

< 1 > ⚙

| <input type="checkbox"/> | ID             | Description | URL   |
|--------------------------|----------------|-------------|---|
| <input type="checkbox"/> | fromMediaLive2 |             | <a href="https://5b6ebaa552949bbd.mediapackage.us-east-1.amazonaws.com/in/v1/13cb920eb64846f1891f69a3167b3557/channel">https://5b6ebaa552949bbd.mediapackage.us-east-1.amazonaws.com/in/v1/13cb920eb64846f1891f69a3167b3557/channel</a>   |
| <input type="checkbox"/> | fromMediaLive1 |             | <a href="https://7755ca1af5faa9bea.mediapackage.us-east-1.amazonaws.com/in/v1/7c59ca874c794615947d7ba48afe167c/channel">https://7755ca1af5faa9bea.mediapackage.us-east-1.amazonaws.com/in/v1/7c59ca874c794615947d7ba48afe167c/channel</a> |

### MediaLive Output Groups

15. Back in **MediaLive**, click the **Add** button under **Output groups** and select **HLS**. Click the **Confirm** button.1



Create channel

**Channel**

Channel and input details

General settings

Input settings

**Output groups (0)**

Add

An output group can contain one or many outputs. For each output, you can configure the encoding settings, and add or remove audio, video, and caption tracks.

Cancel Create channel

**Add output group**

Choose output group type  
The type of group determines how outputs are transported or packaged.

☒ **HLS**  
Send live audio, video, and captions to smartphones, tablets, computers, and other AWS Media Services with HTTP Live Streaming (HLS).

☐ **Archive**  
Archive your live audio, video, and captions to Amazon S3.

☐ **Microsoft Smooth**  
Send live audio, video and captions to an origin server or CDN with Microsoft Smooth Streaming.

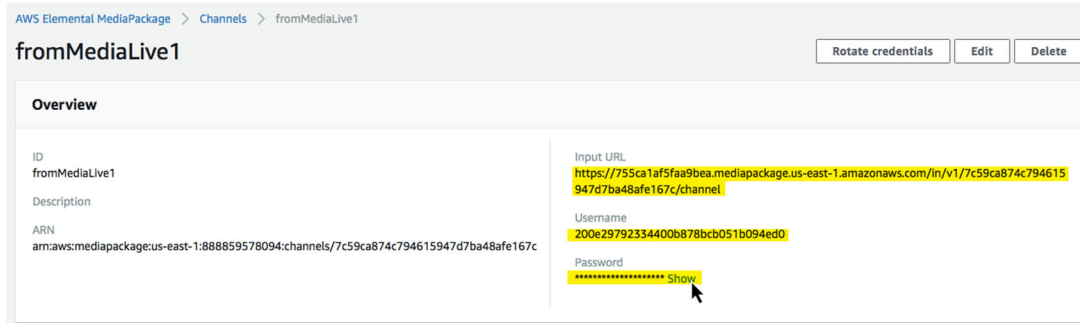
☐ **UDP**  
Broadcast live audio, video, and captions with RTP or UDP.

☐ **RTMP**  
Push live audio, video and captions to an RTMP destination.

Confirm

**Note:** MediaPackage only accepts HLS streams.

16. Copy and Paste the **Input URL**, **Username** and **Password** from the first **MediaPackage** channel you created to input in the next step.



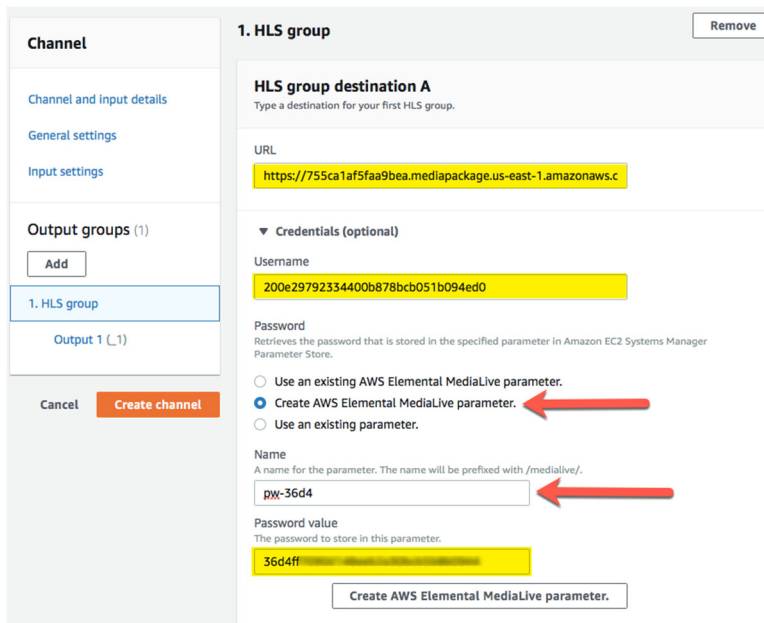
AWS Elemental MediaPackage > Channels > fromMediaLive1

**fromMediaLive1** [Rotate credentials] [Edit] [Delete]

**Overview**

|  |  |
|--|--|
| ID<br>fromMediaLive1   | Input URL<br><a href="https://755ca1af5faa9bea.mediapackage.us-east-1.amazonaws.com/in/v1/7c59ca874c794615947d7ba48afe167c/channel">https://755ca1af5faa9bea.mediapackage.us-east-1.amazonaws.com/in/v1/7c59ca874c794615947d7ba48afe167c/channel</a> |
| Description  | Username<br>200e29792334400b878bcb051b094ed0   |
| ARN<br>arn:aws:mediapackage:us-east-1:888859578094:channels/7c59ca874c794615947d7ba48afe167c | Password<br>[Redacted] Show  |

17. In **MediaLive**, in the first **HLS Group destination A**, enter the copied values for **URL** and **Username**. The first time you set up a password in the Output groups, you will select **Create AWS Elemental MediaLive parameter**. This will allow the password to be saved by AWS for future use. We recommend entering the password **Name** with something that will help you select the correct one when you have multiple channels created in the future. Enter the **Password** value and click to **Create the AWS Elemental MediaLive Parameter**.



Channel [Channel and input details] [General settings] [Input settings]

Output groups (1) [Add]

1. HLS group [Output 1 (1)] [Cancel] [Create channel]

**1. HLS group** [Remove]

**HLS group destination A**  
Type a destination for your first HLS group.

URL  
<https://755ca1af5faa9bea.mediapackage.us-east-1.amazonaws.com/in/v1/7c59ca874c794615947d7ba48afe167c/channel>

▼ Credentials (optional)

Username  
200e29792334400b878bcb051b094ed0

Password  
Retrieves the password that is stored in the specified parameter in Amazon EC2 Systems Manager Parameter Store.

☐ Use an existing AWS Elemental MediaLive parameter.  
☒ **Create AWS Elemental MediaLive parameter.** [Red arrow]  
☐ Use an existing parameter.

Name  
A name for the parameter. The name will be prefixed with /mediaLive/.  
pw-36d4 [Red arrow]

Password value  
The password to store in this parameter.  
36d4ff [Red arrow]

[Create AWS Elemental MediaLive parameter.]

### HLS group destination A

Type a destination for your first HLS group.

URL

https://755ca1af5faa9bea.mediapackage.us-east-1.amazonaws.c

▼ Credentials (optional)

Username

200e29792334400b878bcb051b094ed0

Password

Retrieves the password that is stored in the specified parameter in Amazon EC2 Systems Manager Parameter Store.

☒ Use an existing AWS Elemental MediaLive parameter.

☐ Create AWS Elemental MediaLive parameter.

☐ Use an existing parameter.

Use an existing AWS Elemental MediaLive parameter.

Choose parameters that were created specifically for AWS Elemental MediaLive.

/mediaive/pw-36d4

SecureString ▼

18. Copy and Paste the **Input URL**, **Username** and **Password** from the second **MediaPackage** channel you created to input in the next step.

The screenshot shows the AWS IAM console interface. At the top, there are navigation links: "AWS Elemental MediaPackage > Channels > fromMediaLive2". Below this is the title "fromMediaLive2" and three action buttons: "Rotate credentials", "Edit", and "Delete". A horizontal separator follows. Under the "Overview" section, several fields are displayed:

- ID: fromMediaLive2
- Description:
- ARN: arn:aws:mediapackage:us-east-1:888859578094:channels/13cb920eb64846f1891f69a3167b3557

To the right of these fields, under the heading "Input URL", is a long green-highlighted URL. Below that, the "Username" field contains another green-highlighted string. The "Password" field shows a masked password with a "Show" link next to it.

19. Back in **MediaLive**, in **HLS Group destination B** for redundancy, repeat the process in Step 17 to enter parameters for **URL** and **Username**, Password **Name** and **Password** from **MediaPackage**.

### HLS group destination B


Type a destination for your second (redundant) HLS group.


URL  
https://5b6ebaa552949bbd.mediapackage.us-east-1.amazonaws

▼ Credentials (optional)

Username  
03892b2d40d94fb9ac5bc1b65f20cc42

Password  
Retrieves the password that is stored in the specified parameter in Amazon EC2 Systems Manager Parameter Store.

☐ Use an existing AWS Elemental MediaLive parameter.  
☒ Create AWS Elemental MediaLive parameter.   
☐ Use an existing parameter.

Name  
A name for the parameter. The name will be prefixed with /mediaive/.  
pw-a636 

Password value  
The password to store in this parameter.  
a636

Create AWS Elemental MediaLive parameter.



### HLS group destination B

Type a destination for your second (redundant) HLS group.

URL  
https://5b6ebaa552949bbd.mediapackage.us-east-1.amazonaws

▼ Credentials (optional)

Username  
03892b2d40d94fb9ac5bc1b65f20cc42

Password  
Retrieves the password that is stored in the specified parameter in Amazon EC2 Systems Manager Parameter Store.

☒ Use an existing AWS Elemental MediaLive parameter.  
☐ Create AWS Elemental MediaLive parameter.  
☐ Use an existing parameter.

Use an existing AWS Elemental MediaLive parameter.  
Choose parameters that were created specifically for AWS Elemental MediaLive.

/mediaive/pw-a636  
SecureString

20. Next in **MediaLive** under **HLS Settings** enter a **Name**, and for **CDN Settings** select **Hls webdav**. Keep the other settings as default.

### HLS settings

Name  
push-toMediaPackage

CDN Settings [Info](#)  
Hls webdav

Connection Retry Interval [Info](#)  
1

Num Retries [Info](#)  
10

Filecache Duration [Info](#)  
300

Restart Delay [Info](#)  
15

HTTP Transfer Mode [Info](#)  
NON\_CHUNKED

Input Loss Action [Info](#)  
EMIT\_OUTPUT

Caption Language Mappings (0)  
[Add caption language mappings](#)

## DASH-ISO Output example

21. This is the Output set up for DASH-ISO. See the next section for HLS Output settings. Under **HLS outputs** click the **Add output** button to create Output 2. You can name Output 1 to represent the video output, and Output 2 to represent the audio output.

### HLS outputs (2)

Add one or more outputs to this group. Each output has unique stream settings that enable you to choose the video, audio, and captions tracks that you need.

[Add output](#)

| Output   | Name modifier | Actions                    |
|----------|---------------|----------------------------|
| Output 1 | _v            | <a href="#">Settings</a> × |
| Output 2 | _a            | <a href="#">Settings</a> × |

22. The rest of the settings under **Channel and Input Details** keep as default.

## Input Settings

23. Click on the **Input settings** link and click the **Add audio selectors** button.

**Channel**

Channel and input details

General settings

**Input settings**

Output groups (1)

Add

1. push-toMediaPackage (HLS)

Output 1 (\_v)

Output 2 (\_a)

Cancel Create channel

**Input settings**

**General input settings**

Network Input Settings Info

Input Filter Info

Filter Strength Info

Deblock Filter Info

Denoise Filter Info

Source End Behavior Info

Video Selector Info

Audio Selectors (0)

Add audio selectors

Caption Selectors (0)

Add caption selectors

24. Enter the **Audio Selector Name** and copy it to paste in the next section.

Audio Selectors (1)

Add audio selectors

Audio Selectors 1

Remove

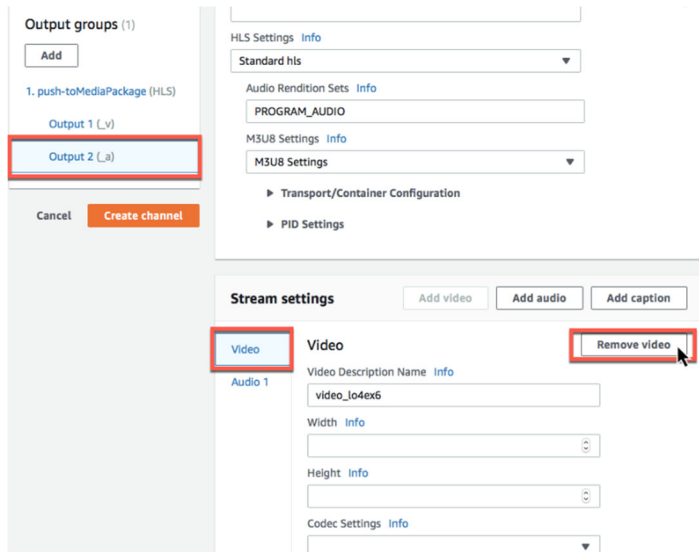
Audio Selector Name Info

SampleAudio

Selector Settings Info



25. Under **Output Groups**, select **Output 2 (\_a)** and click on the **Video** tab. Click the **Remove video** button.



Output groups (1)

Add

1. push-to-MediaPackage (HLS)

Output 1 (\_v)

**Output 2 (\_a)**

Cancel Create channel

HLS Settings Info

Standard hls

Audio Rendition Sets Info

PROGRAM\_AUDIO

MSUB Settings Info

MSUB Settings

Transport/Container Configuration

PID Settings

Stream settings

Add video Add audio Add caption

**Video**

Video Description Name Info

video\_lo4ex6

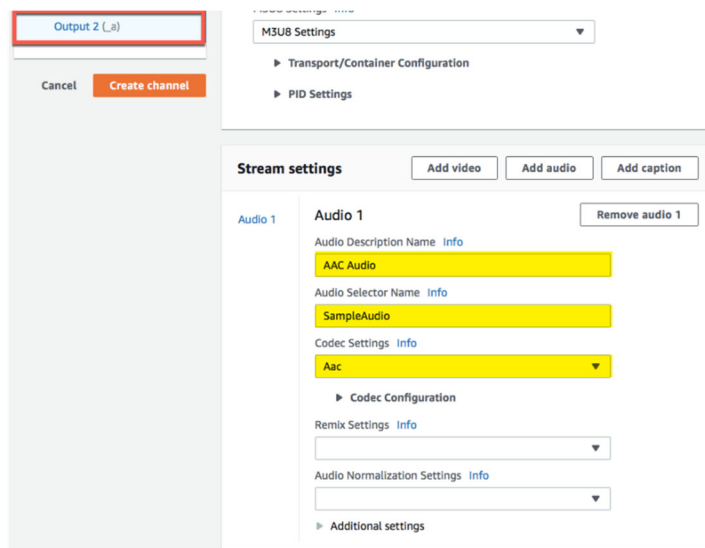
Width Info

Height Info

Codec Settings Info

**Remove video**

26. In the **Audio 1** section, enter the **Audio Description Name** (we recommend AAC Audio), then paste the **Audio Selector Name** that you entered in Step 24. Select **Aac** under Codec Settings.



Output 2 (\_a)

Cancel Create channel

MSUB Settings

Transport/Container Configuration

PID Settings

Stream settings

Add video Add audio Add caption

Audio 1

Audio 1

Remove audio 1

Audio Description Name Info

AAC Audio

Audio Selector Name Info

SampleAudio

Codec Settings Info

Aac

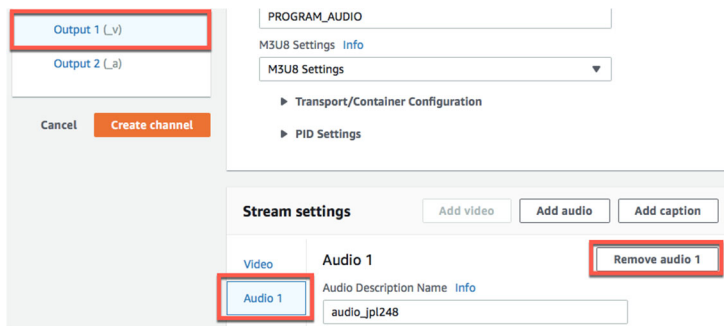
Codec Configuration

Remix Settings Info

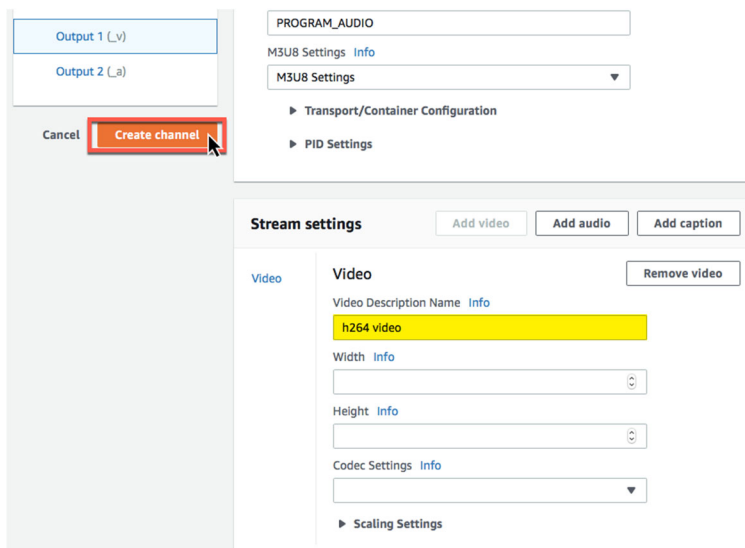
Audio Normalization Settings Info

Additional settings

27. Next, select **Output 1 (\_v)** and **Remove audio 1**.



28. You can rename the **Video Description Name** if you prefer and leave the default settings. Then click **Create channel**.



29. The MediaLive channel should now be created.

AWS Elemental MediaLive > Channels

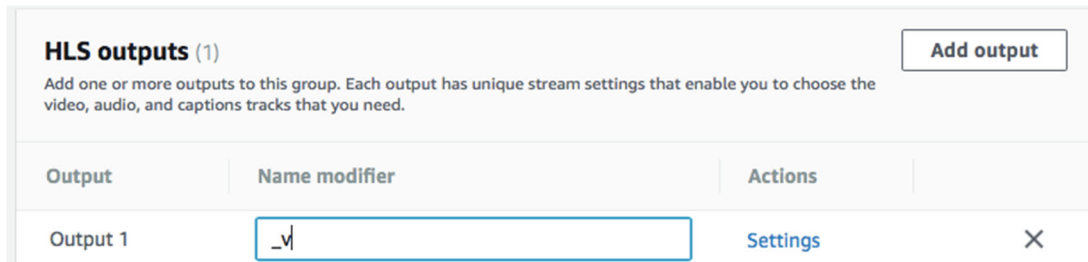
Channels (2) Start Stop Actions ▾ Create channel

< 1 > ⚙

|                       | Name                | State | ID      | ARN  | Input  |
|-----------------------|---------------------|-------|---------|--|--------|
| <input type="radio"/> | sample-live-channel | Idle  | 2838182 | arn:aws:medialive:us-east-1:888859578094:channel:2838182 | 299196 |

## HLS Output example

30. This is the Output setup for **HLS**. Under **HLS outputs** rename **Output 1** to represent the video output.

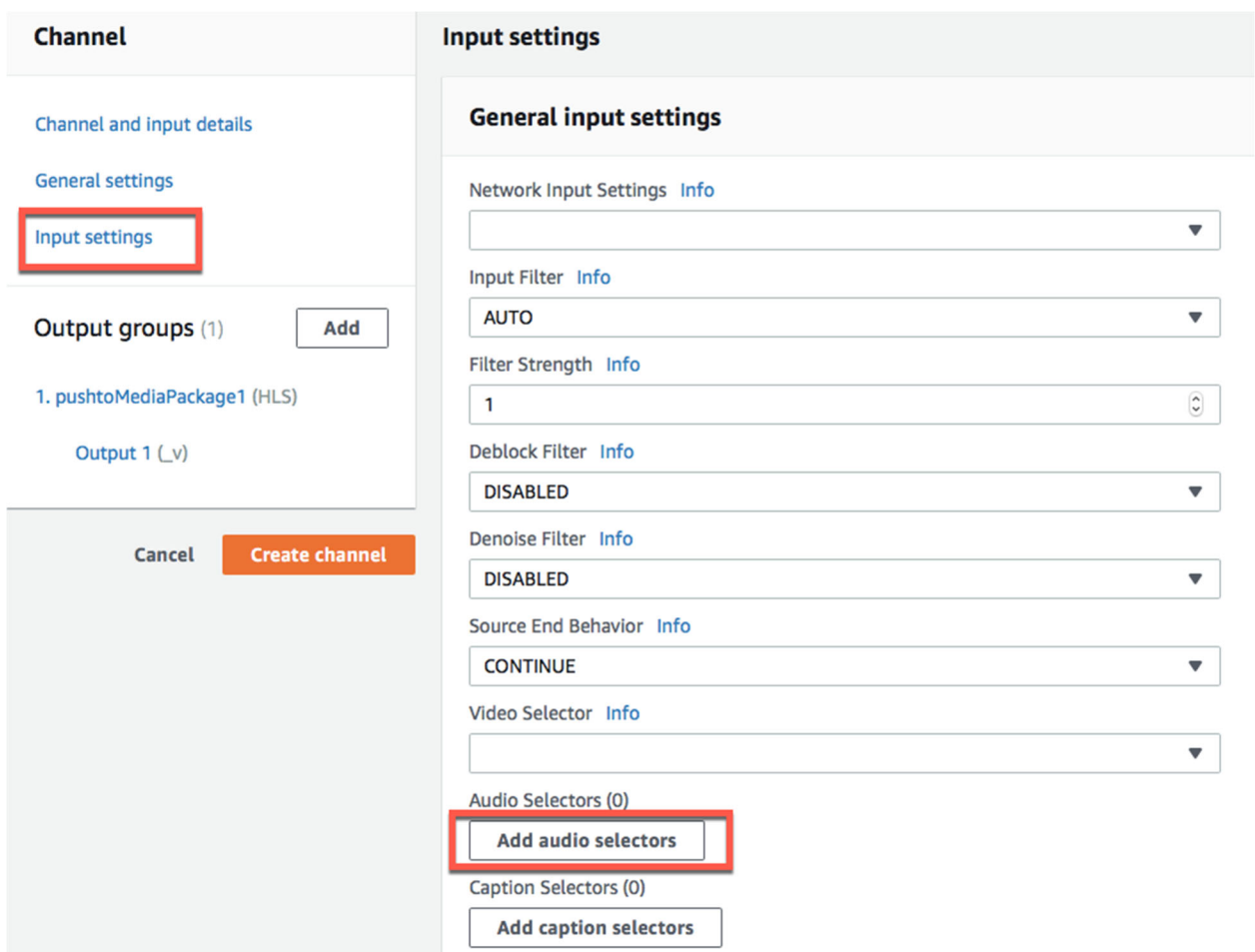


| Output   | Name modifier                   | Actions                                 |
|----------|---------------------------------|---|
| Output 1 | <input type="text" value="_v"/> | <a href="#">Settings</a> <span>✕</span> |

31. The rest of the settings under **Channel and Input Details** keep as default.

## Input Settings

32. Click on the **Input settings** link and click the **Add audio selectors** button.



### Channel

- [Channel and input details](#)
- [General settings](#)
- [Input settings](#)**

Output groups (1) Add

1. pushtoMediaPackage1 (HLS)

Output 1 (\_v)

Cancel Create channel

### Input settings

#### General input settings

Network Input Settings [Info](#)

Input Filter [Info](#)

AUTO

Filter Strength [Info](#)

1

Deblock Filter [Info](#)

DISABLED

Denoise Filter [Info](#)

DISABLED

Source End Behavior [Info](#)

CONTINUE

Video Selector [Info](#)

Audio Selectors (0)

**Add audio selectors**

Caption Selectors (0)

Add caption selectors

33. Enter the **Audio Selector Name** and copy it to paste in the next section.

Audio Selectors (1)

[Add audio selectors](#)

Audio Selectors 1 [Remove](#)

Audio Selector Name [Info](#)

**SampleAudio**

Selector Settings [Info](#)

34. Under **Output Groups**, In the **Audio 1** section, enter the **Audio Description Name** (we recommend AAC Audio), then paste the **Audio Selector Name** that you entered in Step 33. Select **Aac** under Codec Settings.

**Stream settings** [Add video](#) [Add audio](#) [Add caption](#)

[Video](#)

**Audio 1**

**Audio 1** [Remove audio 1](#)

Audio Description Name [Info](#)

**AAC Audio**

Audio Selector Name [Info](#)

**SampleAudio**

Codec Settings [Info](#)

**Aac**

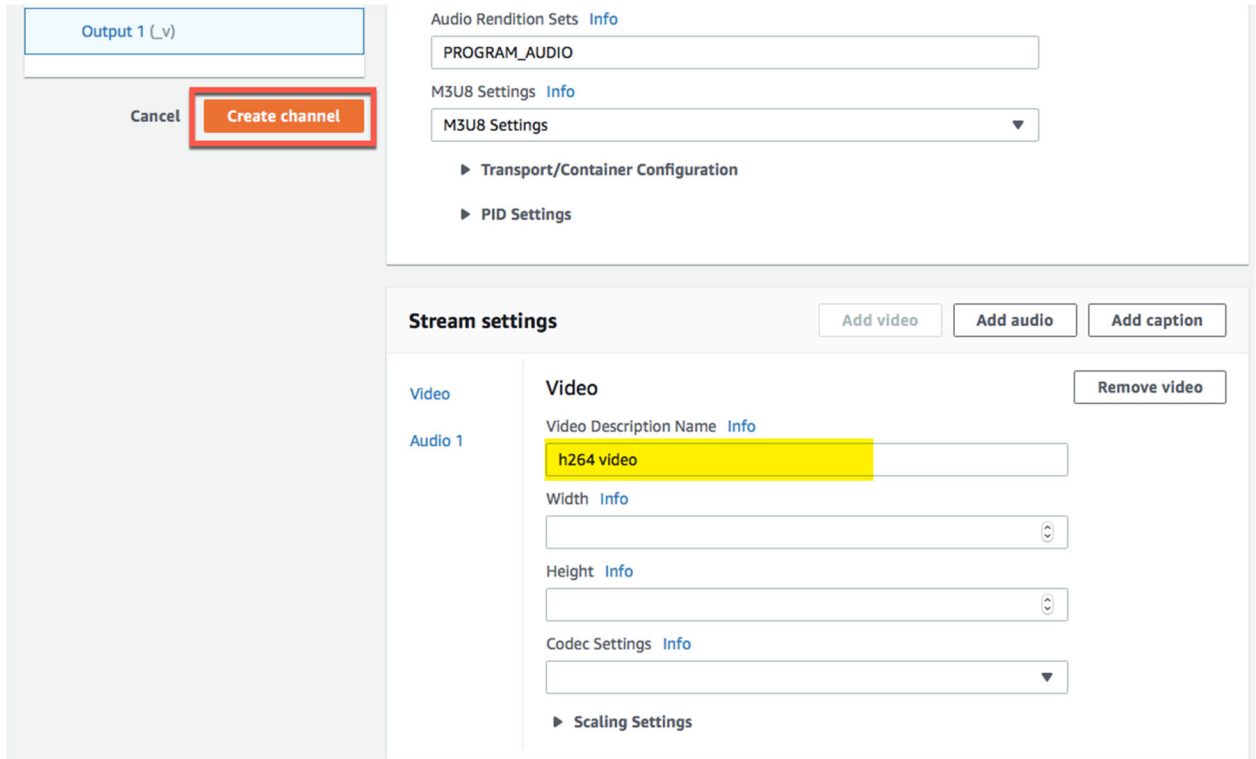
► **Codec Configuration**

Remix Settings [Info](#)

Audio Normalization Settings [Info](#)

► **Additional settings**

35. Next, select **Output 1 (\_v)**. You can rename the **Video Description Name** if you prefer and leave the default settings. Then click **Create channel**.



Output 1 (\_v)

Cancel **Create channel**

Audio Rendition Sets [Info](#)

PROGRAM\_AUDIO

M3U8 Settings [Info](#)

M3U8 Settings ▼

► Transport/Container Configuration

► PID Settings

**Stream settings** [Add video](#) [Add audio](#) [Add caption](#)

**Video** [Remove video](#)

Video Description Name [Info](#)

h264 video

Width [Info](#)

Height [Info](#)

Codec Settings [Info](#)

► Scaling Settings

36. The MediaLive channel should now be created.

AWS Elemental MediaLive > Channels

**Channels (2)** [Start](#) [Stop](#) [Actions ▼](#) [Create channel](#)

< 1 > ⚙

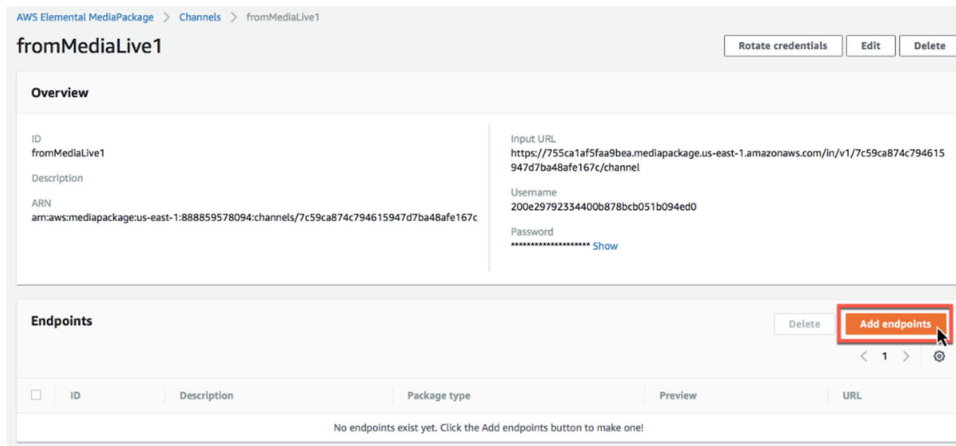
|                       | Name                | State | ID      | ARN  | Input  |
|-----------------------|---------------------|-------|---------|--|--------|
| <input type="radio"/> | sample-live-channel | Idle  | 2838182 | arn:aws:medialive:us-east-1:888859578094:channel:2838182 | 299196 |

## Step 4 - Create Endpoints in MediaPackage

Endpoints are the outputs for the live stream for viewing. You can have multiple endpoints for each channel.

### No DRM Endpoint example

1. In MediaPackage, from the first MediaLive channel you created, click the **Add endpoints** button.



AWS Elemental MediaPackage > Channels > fromMediaLive1

fromMediaLive1 Rotate credentials Edit Delete

**Overview**

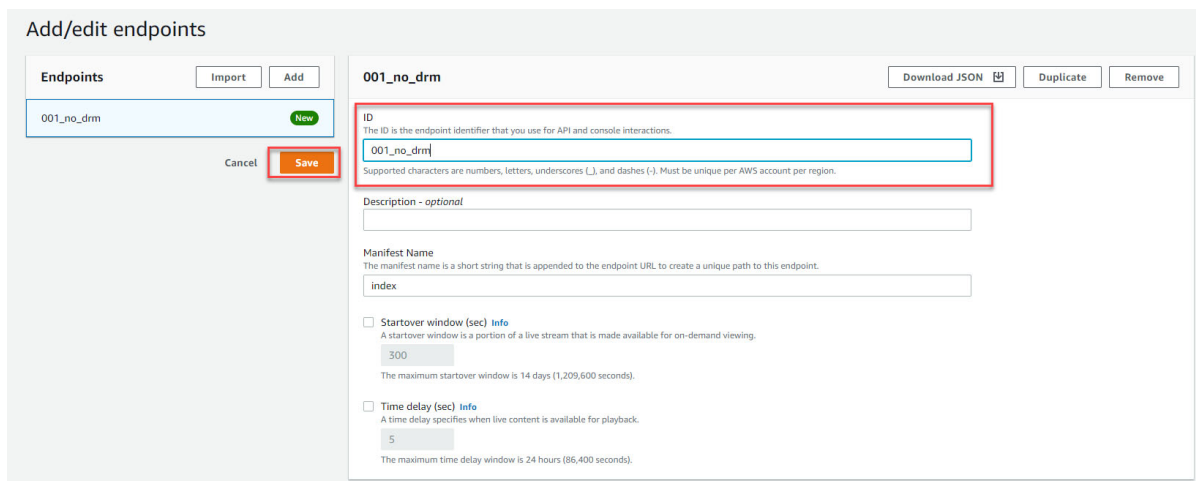
ID: fromMediaLive1  
Description:   
ARN: amazaws:mediapackage-us-east-1:888859578094:channels/7c59ca874c794615947d7ba48afe167c

Input URL: https://755ca1af5faa9bea.mediapackage.us-east-1.amazonaws.com/in/v1/7c59ca874c794615947d7ba48afe167c/channel  
Username: 200e29792334400b878bcb051b094ed0  
Password: \*\*\*\*\* [Show](#)

**Endpoints** Delete Add endpoints

| ID  | Description | Package type | Preview | URL |
|---|-------------|--------------|---------|-----|
| No endpoints exist yet. Click the Add endpoints button to make one! |             |              |         |     |

2. Edit the **Endpoint ID** and **Manifest Name** to a unique identifier.



Add/edit endpoints

Endpoints Import Add

001\_no\_drm New

Cancel Save

**001\_no\_drm** Download JSON Duplicate Remove

ID: 001\_no\_drm  
The ID is the endpoint identifier that you use for API and console interactions.  
Supported characters are numbers, letters, underscores (\_), and dashes (-). Must be unique per AWS account per region.

Description - optional

Manifest Name  
The manifest name is a short string that is appended to the endpoint URL to create a unique path to this endpoint.  
index

☐ **Startover window (sec)** [Info](#)  
A startover window is a portion of a live stream that is made available for on-demand viewing.  
300  
The maximum startover window is 14 days (1,209,600 seconds).

☐ **Time delay (sec)** [Info](#)  
A time delay specifies when live content is available for playback.  
5  
The maximum time delay window is 24 hours (86,400 seconds).

3. Once these settings are completed, click the **Save** button to create the endpoint.

- Now for redundancy, from your second MediaLive channel, create a 001\_no\_drm endpoint with the same settings as the one we just created, but change the ID name to indicate the redundant endpoint.

For this example, we called our first channel **MediaLive1** and created the DASH-ISO endpoint **001\_no\_drm**. Under **MediaLive2** we will create a duplicate DASH-ISO endpoint but name it **001\_no\_drm\_2**.

Duplicate ALL the same settings for the second No DRM endpoint under the second channel and click **Save**.

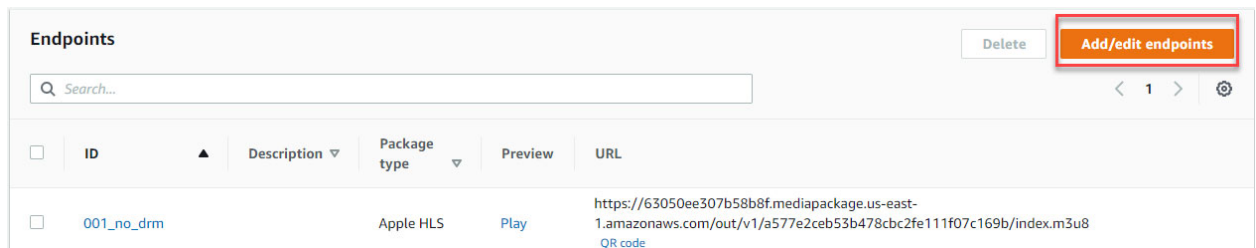
**Note:** *It is helpful to have multiple tabs open during this process, for ease of copying settings from one channel to the other.*

- Once **MediaLive** is running and publishing to **MediaPackage**, you will be able to access the URL created to play the encrypted Media.

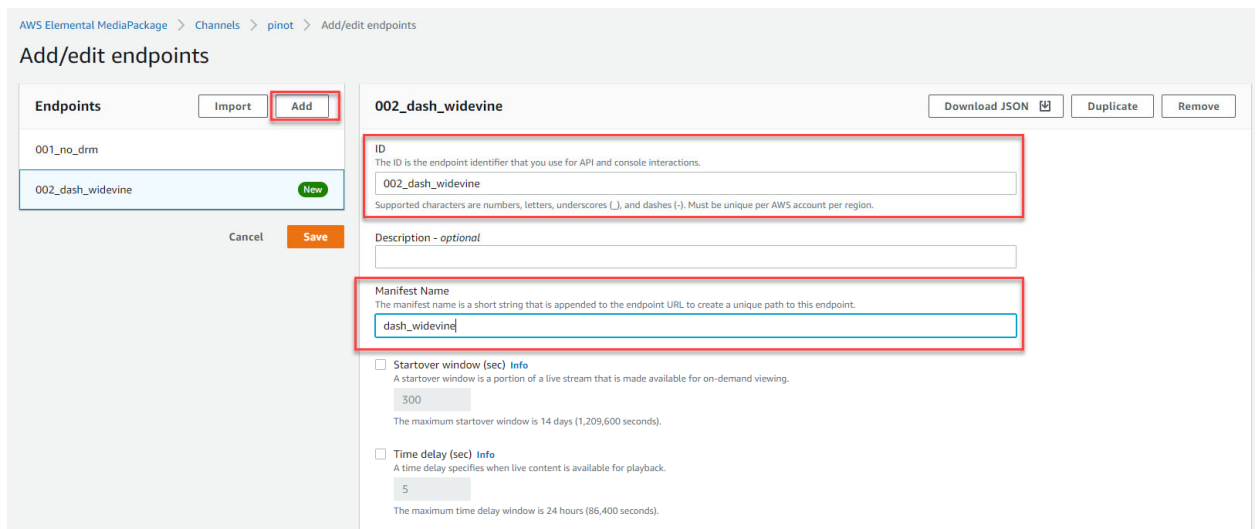
| Endpoints  |            |             |              |                      |   |
|--|------------|-------------|--------------|----------------------|---|
| <input type="text" value="Search..."/>           |            |             |              |                      | <input type="button" value="Delete"/> <input type="button" value="Add/edit endpoints"/>   |
| <div> <div>&lt; 1 &gt;</div> <div>⚙</div> </div> |            |             |              |                      |   |
| <input type="checkbox"/>                         | ID         | Description | Package type | Preview              | URL   |
| <input type="checkbox"/>                         | 001_no_drm |             | Apple HLS    | <a href="#">Play</a> | <a href="https://63c1b8f.mediapackage.us-east-1.amazonaws.com/out/v1/a57207c169b/index.m3u8">https://63c1b8f.mediapackage.us-east-1.amazonaws.com/out/v1/a57207c169b/index.m3u8</a> QR code |

## DASH-ISO Widevine Endpoint example

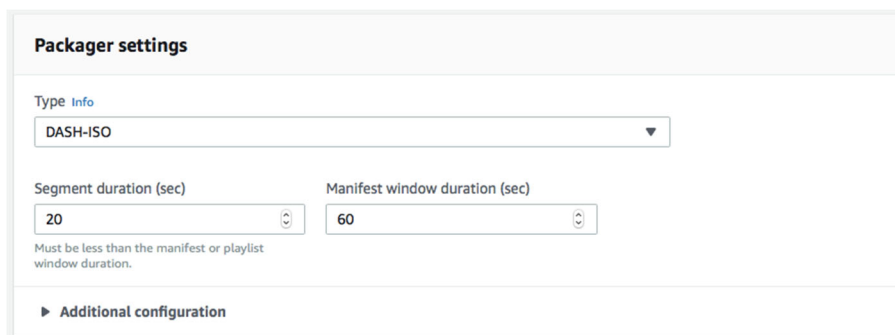
1. In **MediaPackage**, from the first MediaLive channel you created, click the **Add/edit endpoints** button.



2. Click **Add**. Edit the Endpoint **ID** and **Manifest Name** to a unique identifier.



3. Under **Packager Settings**, select the **Type DASH-ISO**, and update **Segment duration (sec)** to **20** seconds.






#### 4. Scroll down and select the toggle for **Encrypt Content**.

**Package encryption**

☐ No encryption  
This endpoint is not copy-protected.

☒ **Encrypt content** [Info](#)  
The endpoint is copy-protected. 

**Resource ID**  
The resource ID is the identifier that you send to the key server to identify this endpoint.

002\_dash\_widevine

Supported characters are numbers, letters, underscores (\_), and dashes (-).

**System IDs** [Info](#)  
A system ID is a unique identifiers for the DRM system to use. Type one per line.

edef8ba9-79d6-4ace-a3c8-27dcd51d21ed

Must contain either one or two entries, as defined by the packager type.

**URL**  
The URL for the proxy that you created so AWS Elemental MediaPackage can talk to your key server.

https://i2q[redacted]-api.us-east-1.amazonaws.com/production/copyProtection

**Role ARN**  
The Amazon Resource Name (ARN) for the IAM role that you created that allows communication between SPEKE and AWS Elemental MediaPackage.

arn:aws:iam::5[redacted]:role/MediaPackage

Must be in this format: arn:aws:iam::[accountID]:role/[name]

**SPEKE version** [Info](#)  
Select the version of SPEKE to use for encryption on this endpoint. SPEKE 1.0 is the legacy version that uses CPIX 2.0, and supports single key encryption. SPEKE 2.0 uses CPIX 2.3, and supports multiple key encryption.

Version 2.0

**Video encryption preset** [Info](#)  
Choose a video encryption preset.

Preset Video 1  
Encrypts all video tracks with one key

**Audio encryption preset** [Info](#)  
Choose an audio encryption preset.

Preset Audio 1  
Encrypts all audio tracks with one key

The parameters are as follows:

- **ResourceID**: this will be the ID that references your DRM Keys. This is a required field.

**Note:** The first time you send a ResourceID to run a job, the ID will be tied to the DRM keys for that job. Jobs can use the same ResourceID to reference the same keys or for new DRM Keys send a new ResourceID. It is best not to use a ResourceID from a failed job.

- **System ID**: Unique identifiers for the DRM system to use. These System IDs are industry standard, must be utilized for encryption. Insert the System ID's for Widevine (one ID per line):  
(Widevine) **edef8ba9-79d6-4ace-a3c8-27dcd51d21ed**

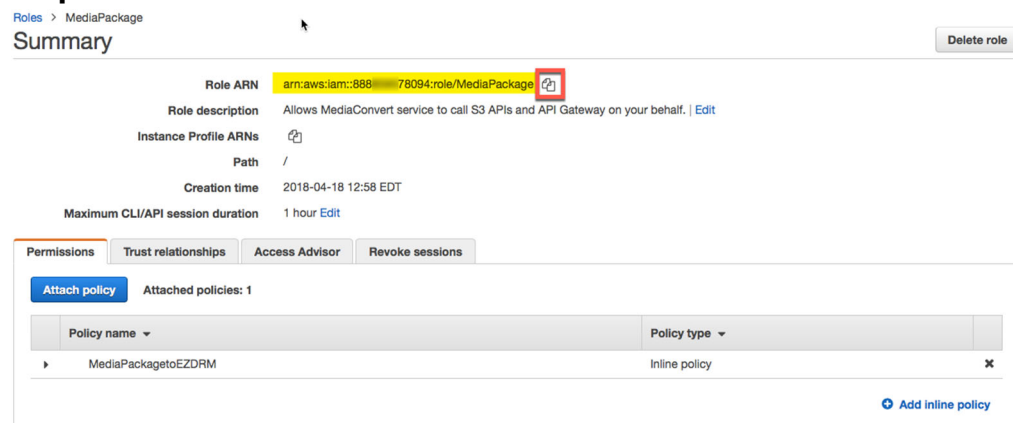
**Note:** The System ID values need to be lowercase.

- **URL:** The URL is the **API URL** copied from **Step 1:**

Sample URL:

<https://i2xXXjdb1e.execute-api.us-east-1.amazonaws.com/production/copyProtection>

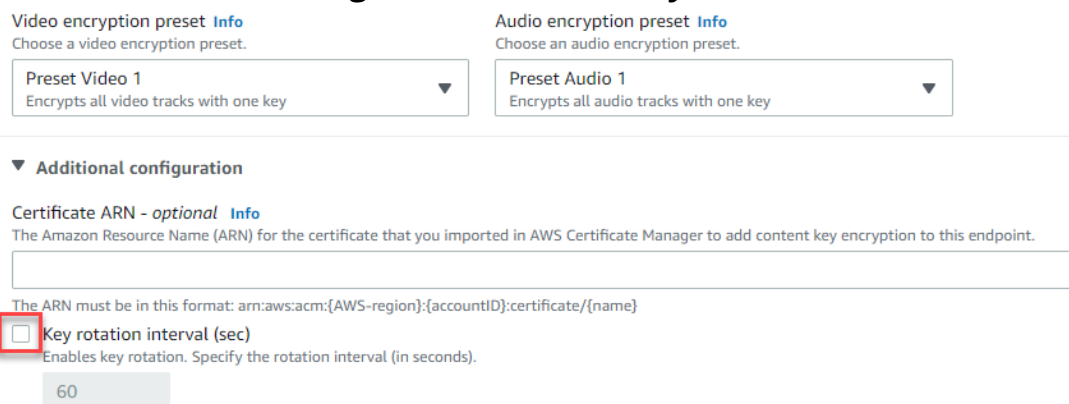
- **Role ARN:** This value is from the **MediaPackage Role ARN** created in **Step 2.**



The screenshot shows the AWS IAM console for a role named 'MediaPackage'. The 'Summary' tab is selected. The 'Role ARN' is highlighted as 'arn:aws:iam::888-78094:role/MediaPackage'. The 'Role description' states: 'Allows MediaConvert service to call S3 APIs and API Gateway on your behalf.' The 'Instance Profile ARNs' section shows a path of '/'. The 'Creation time' is '2018-04-18 12:58 EDT' and the 'Maximum CLI/API session duration' is '1 hour'. The 'Permissions' tab is also visible, showing one attached policy named 'MediaPackageToEZDRM' of type 'Inline policy'.

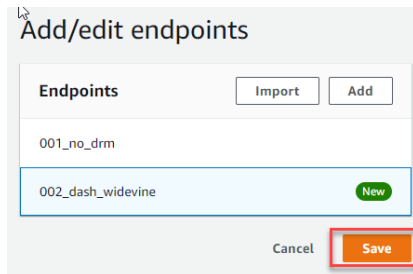
- **SPEKE version:** Select **Version 2.0**

## 5. Under **Additional configuration** uncheck **Key rotation interval (sec).**



The screenshot shows the AWS MediaPackage console configuration page. Under 'Video encryption preset', 'Preset Video 1' is selected. Under 'Audio encryption preset', 'Preset Audio 1' is selected. In the 'Additional configuration' section, the 'Certificate ARN' field is empty. Below it, the 'Key rotation interval (sec)' checkbox is unchecked, and the '60' input field is visible.

- Once these settings are completed, click the **Save** button to create the endpoint.



The dialog box titled "Add/edit endpoints" contains a table with the following data:

| Endpoints         | Import | Add |
|-------------------|--------|-----|
| 001_no_drm        |        |     |
| 002_dash_widevine |        | New |

At the bottom of the dialog, there are "Cancel" and "Save" buttons. The "Save" button is highlighted with a red border.

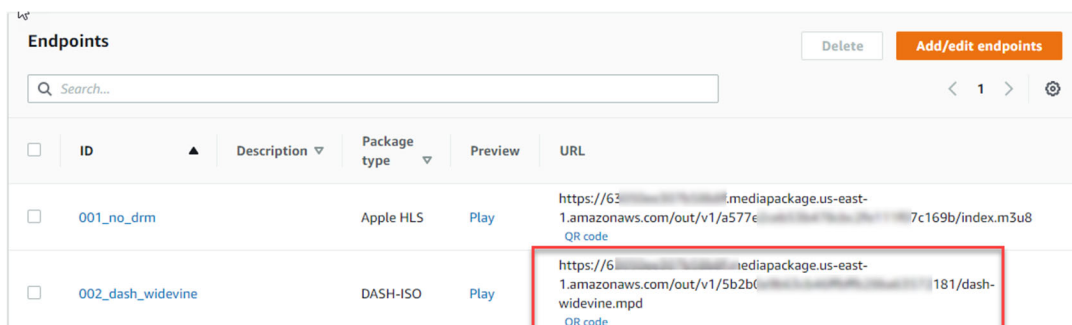
- Now for redundancy, from your second MediaLive channel, create a DASH-ISO endpoint with the same settings as the one we just created, but change the **ID** name to indicate the redundant endpoint.

For this example, we called our first channel **MediaLive1** and created the DASH-ISO endpoint **002\_dash\_widevine**. Under **MediaLive2** we will create a duplicate DASH-ISO endpoint but name it **002\_dash\_widevine\_2**.

Duplicate ALL the same settings for the second DASH-ISO endpoint under the second channel and click **Save**.

**Note:** *It is helpful to have multiple tabs open during this process, for ease of copying settings from one channel to the other.*

- Once **MediaLive** is running and publishing to **MediaPackage**, you will be able to access the URL created to play the encrypted Media.



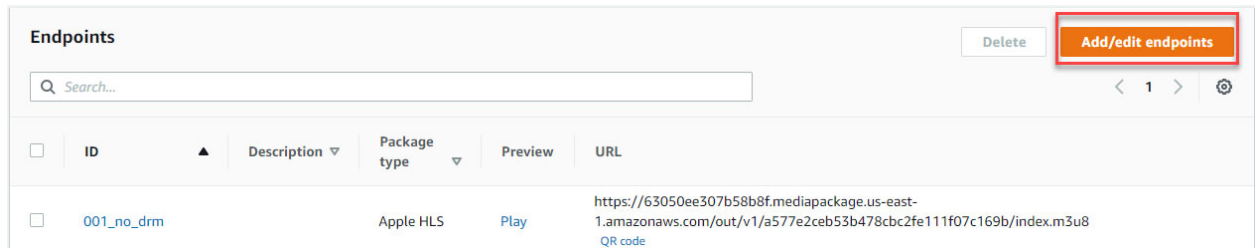
The screenshot shows the "Endpoints" section of the MediaPackage console. It includes a search bar, a "Delete" button, and an "Add/edit endpoints" button. Below is a table with the following data:

| <input type="checkbox"/> | ID                | Description | Package type | Preview | URL   |
|--------------------------|-------------------|-------------|--------------|---------|---|
| <input type="checkbox"/> | 001_no_drm        |             | Apple HLS    | Play    | https://63...mediapackage.us-east-1.amazonaws.com/out/v1/a577e...7c169b/index.m3u8<br>QR code   |
| <input type="checkbox"/> | 002_dash_widevine |             | DASH-ISO     | Play    | https://6...mediapackage.us-east-1.amazonaws.com/out/v1/5b2b...181/dash-widevine.mpd<br>QR code |

The URL for the 002\_dash\_widevine endpoint is highlighted with a red border.

## DASH-ISO Widevine & PlayReady Endpoint example

1. In **MediaPackage**, from the first MediaLive channel you created, click the **Add/edit endpoints** button.



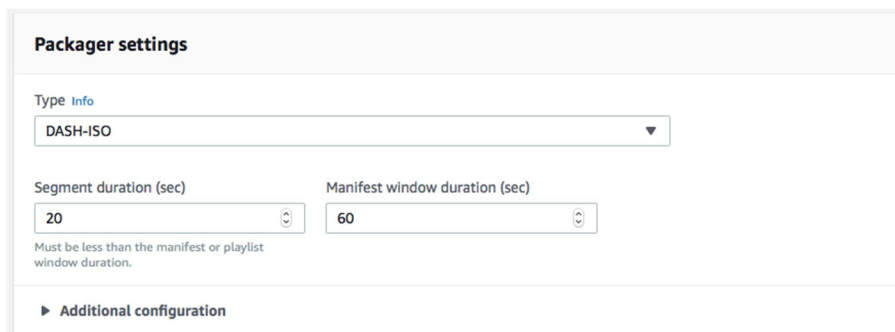
The screenshot shows the 'Endpoints' section in the MediaPackage console. At the top right, there is a 'Delete' button and a red-bordered 'Add/edit endpoints' button. Below is a search bar and a table with columns: ID, Description, Package type, Preview, and URL. One endpoint is listed with ID '001\_no\_drm', Description 'Apple HLS', Package type 'Apple HLS', Preview 'Play', and a long URL.

2. Click **Add**. Edit the Endpoint **ID** and **Manifest Name** to a unique identifier.



The screenshot shows the 'Add/edit endpoints' form. On the left, a list of endpoints includes '002\_dash\_widevine', '001\_no\_drm', and '003\_dash\_widevine\_playready' (highlighted with a green 'New' badge). The 'Add' button is red-bordered. The main form for '003\_dash\_widevine\_playready' has fields for ID, Description, and Manifest Name, all highlighted with red boxes. The ID field contains '003\_dash\_widevine\_playready'. The Manifest Name field also contains '003\_dash\_widevine\_playready'. There are also checkboxes for 'Startover window (sec)' and 'Time delay (sec)'.

3. Under **Packager Settings**, select the **Type DASH-ISO**, and update **Segment duration (sec)** to **20** seconds.



The screenshot shows the 'Packager settings' form. The 'Type' dropdown is set to 'DASH-ISO'. The 'Segment duration (sec)' is set to '20' and the 'Manifest window duration (sec)' is set to '60'. A note states: 'Must be less than the manifest or playlist window duration.' There is an 'Additional configuration' link at the bottom.

#### 4. Scroll down and select the toggle for **Encrypt Content**.

**Package encryption**

☐ No encryption  
This endpoint is not copy-protected.

☒ **Encrypt content** [Info](#)  
The endpoint is copy-protected.

**Resource ID**  
The resource ID is the identifier that you send to the key server to identify this endpoint.

003\_dash\_widevine\_playready

Supported characters are numbers, letters, underscores (\_), and dashes (-).

**System IDs** [Info](#)  
A system ID is a unique identifiers for the DRM system to use. Type one per line.

edef8ba9-79d6-4ace-a3c8-27dcd51d21ed  
9a04f079-9840-4286-ab92-e65be0885f95

Must contain either one or two entries, as defined by the packager type.

**URL**  
The URL for the proxy that you created so AWS Elemental MediaPackage can talk to your key server.

https://12q6...e-api.us-east-1.amazonaws.com/production/copyProtection

**Role ARN**  
The Amazon Resource Name (ARN) for the IAM role that you created that allows communication between SPEKE and AWS Elemental MediaPackage.

arn:aws:iam::507...552:role/MediaPackage

Must be in this format: arn:aws:iam::(accountID):role/(name)

**SPEKE version** [Info](#)  
Select the version of SPEKE to use for encryption on this endpoint. SPEKE 1.0 is the legacy version that uses CPIX 2.0, and supports single key encryption. SPEKE 2.0 uses CPIX 2.3, and supports multiple key encryption.

Version 2.0

The parameters are as follows:

- **ResourceID**: this will be the ID that references your DRM Keys. This is a required field.

**Note:** The first time you send a ResourceID to run a job, the ID will be tied to the DRM keys for that job. Jobs can use the same ResourceID to reference the same keys or for new DRM Keys send a new ResourceID. It is best not to use a ResourceID from a failed job.

- **System ID**: Unique identifiers for the DRM system to use. These System IDs are industry standard, must be utilized for encryption. Insert the System ID's for Widevine and PlayReady, one ID per line:  
(Widevine) **edef8ba9-79d6-4ace-a3c8-27dcd51d21ed**  
(PlayReady) **9a04f079-9840-4286-ab92-e65be0885f95**

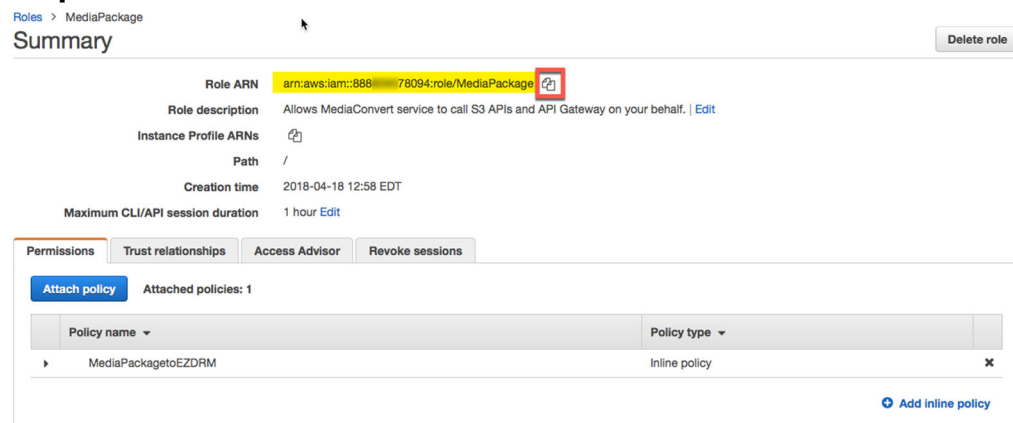
**Note:** The System ID values need to be lowercase.

- **URL:** The URL is the **API URL** copied from **Step 1**:

Sample URL:

<https://i2qXXjdb1e.execute-api.us-east-1.amazonaws.com/production/copyProtection>

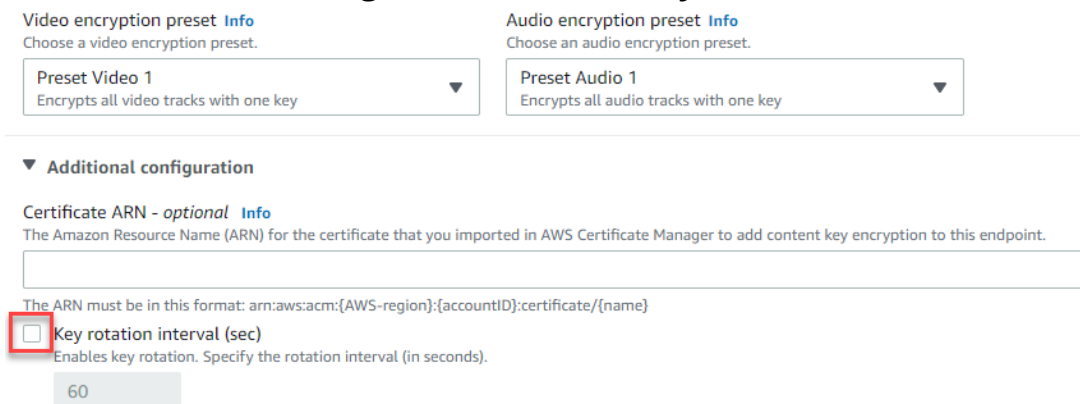
- **Role ARN:** This value is from the **MediaPackage Role ARN** created in **Step 2**.



The screenshot shows the AWS IAM console for a role named 'MediaPackage'. The 'Summary' tab is selected. The 'Role ARN' is highlighted as 'arn:aws:iam::868...:role/MediaPackage'. The 'Role description' is 'Allows MediaConvert service to call S3 APIs and API Gateway on your behalf.' The 'Permissions' tab is also visible, showing one attached policy named 'MediaPackageToEZDRM'.

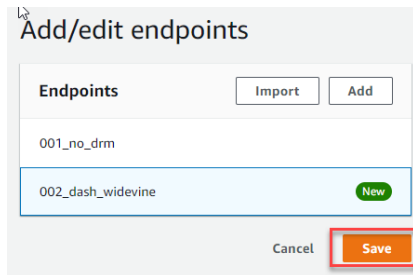
- **SPEKE version:** Select **Version 2.0**

## 5. Under **Additional configuration** uncheck **Key rotation interval (sec)**.



The screenshot shows the 'Additional configuration' section. It includes fields for 'Video encryption preset' (set to 'Preset Video 1') and 'Audio encryption preset' (set to 'Preset Audio 1'). Below these, the 'Additional configuration' section is expanded, showing the 'Certificate ARN' field. The 'Key rotation interval (sec)' checkbox is unchecked, and the '60' value is entered in the adjacent field.

- Once these settings are completed, click the **Save** button to create the endpoint.



Add/edit endpoints

| Endpoints         | Import | Add |
|-------------------|--------|-----|
| 001_no_drm        |        |     |
| 002_dash_widevine |        | New |

Cancel Save

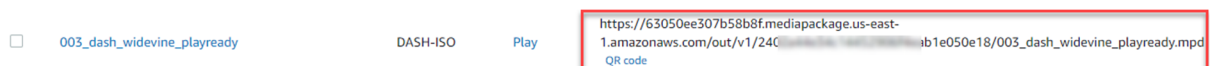
- Now for redundancy, from your second MediaLive channel, create a DASH-ISO endpoint with the same settings as the one we just created, but change the **ID** name to indicate the redundant endpoint.

For this example, we called our first channel **MediaLive1** and created the DASH-ISO endpoint **003\_dash\_widevine\_playready**. Under **MediaLive2** we will create a duplicate DASH-ISO endpoint but name it **003\_dash\_widevine\_playready\_2**.

Duplicate ALL the same settings for the second DASH-ISO endpoint under the second channel and click **Save**.

**Note:** *It is helpful to have multiple tabs open during this process, for ease of copying settings from one channel to the other.*

- Once **MediaLive** is running and publishing to **MediaPackage**, you will be able to access the URL created to play the encrypted Media.

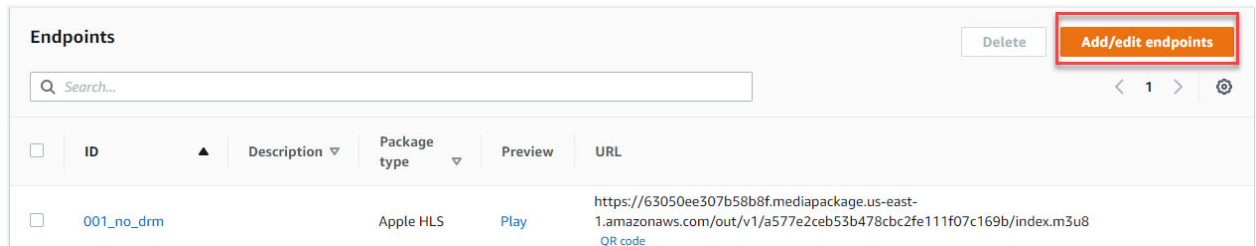


☐ 003\_dash\_widevine\_playready DASH-ISO Play

https://63050ee307b58b8f.mediapackage.us-east-1.amazonaws.com/out/v1/240...ib1e050e18/003\_dash\_widevine\_playready.mpd  
QR code

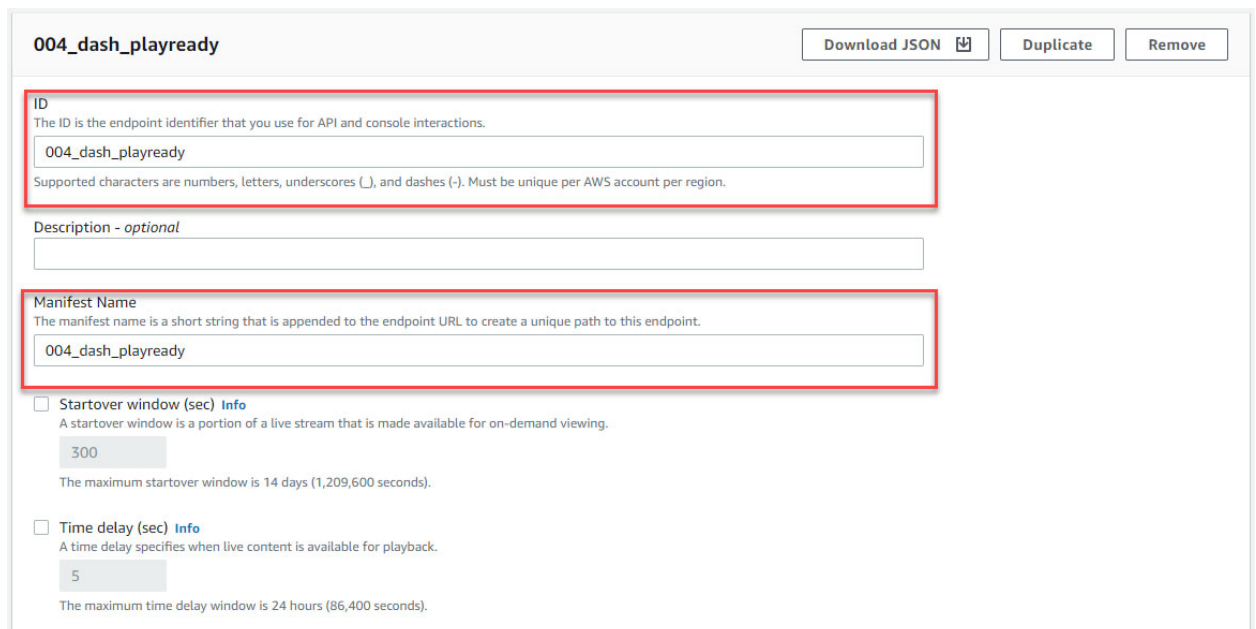
## DASH-ISO PlayReady Endpoint example

1. In **MediaPackage**, from the first MediaLive channel you created, click the **Add/edit endpoints** button.



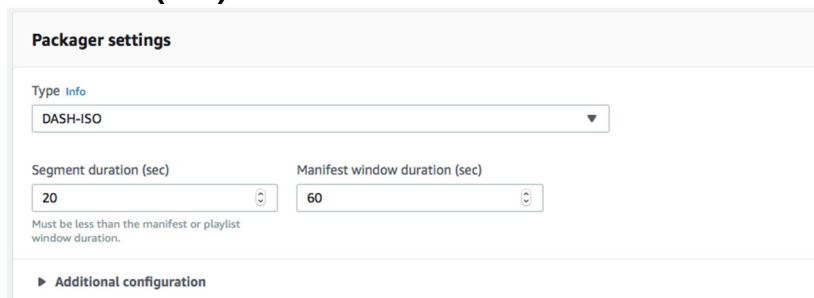
The screenshot shows the 'Endpoints' section of the AWS MediaPackage console. At the top right, there are buttons for 'Delete' and 'Add/edit endpoints', with the latter highlighted by a red box. Below is a search bar and a table with columns: ID, Description, Package type, Preview, and URL. One endpoint is listed with ID '001\_no\_drm', Package type 'Apple HLS', and a URL for Amazon S3.

2. Click **Add**. Edit the Endpoint **ID** and **Manifest Name** to a unique identifier.



The screenshot shows the configuration form for an endpoint named '004\_dash\_playready'. The 'ID' field is highlighted with a red box and contains '004\_dash\_playready'. Below it is a 'Description' field. The 'Manifest Name' field is also highlighted with a red box and contains '004\_dash\_playready'. Further down, there are checkboxes for 'Startover window (sec)' and 'Time delay (sec)', each with a value input field and explanatory text.

9. Under **Packager Settings**, select the **Type DASH-ISO**, and update **Segment duration (sec)** to **20** seconds.




The screenshot shows the 'Packager settings' form. The 'Type' dropdown menu is set to 'DASH-ISO'. Below it, the 'Segment duration (sec)' is set to '20' and the 'Manifest window duration (sec)' is set to '60'. A note states: 'Must be less than the manifest or playlist window duration.' At the bottom, there is a link for 'Additional configuration'.



## 10. Scroll down and select the toggle for **Encrypt Content**.

**Package encryption**

☐ No encryption  
This endpoint is not copy-protected.

☒ **Encrypt content** [Info](#)  
The endpoint is copy-protected. 

**Resource ID**  
The resource ID is the identifier that you send to the key server to identify this endpoint.

004\_dash\_playready

Supported characters are numbers, letters, underscores (\_), and dashes (-).

**System IDs** [Info](#)  
A system ID is a unique identifiers for the DRM system to use. Type one per line.

9a04f079-9840-4286-ab92-e65be0885f95

Must contain either one or two entries, as defined by the packager type.

**URL**  
The URL for the proxy that you created so AWS Elemental MediaPackage can talk to your key server.

https://i2c...e.execute-api.us-east-1.amazonaws.com/production/copyProtection

**Role ARN**  
The Amazon Resource Name (ARN) for the IAM role that you created that allows communication between SPEKE and AWS Elemental MediaPackage.

arn:aws:iam::507...:role/MediaPackage

Must be in this format: arn:aws:iam:[accountID]:role/{name}

**SPEKE version** [Info](#)  
Select the version of SPEKE to use for encryption on this endpoint. SPEKE 1.0 is the legacy version that uses CPIX 2.0, and supports single key encryption. SPEKE 2.0 uses CPIX 2.3, and supports multiple key encryption.

Version 2.0

The parameters are as follows:

- **ResourceID**: this will be the ID that references your DRM Keys. This is a required field.

**Note:** The first time you send a ResourceID to run a job, the ID will be tied to the DRM keys for that job. Jobs can use the same ResourceID to reference the same keys or for new DRM Keys send a new ResourceID. It is best not to use a ResourceID from a failed job.

- **System ID**: Unique identifiers for the DRM system to use. These System IDs are industry standard, must be utilized for encryption. Insert the System ID's for PlayReady (one ID per line):  
(PlayReady) **9a04f079-9840-4286-ab92-e65be0885f95**

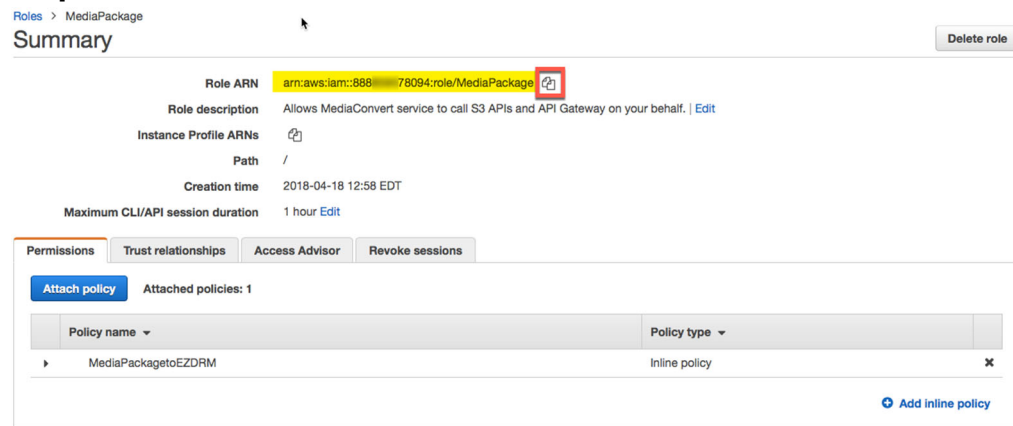
**Note:** The System ID values need to be lowercase.

- **URL:** The URL is the **API URL** copied from **Step 1**:

Sample URL:

<https://i2qXXjdb1e.execute-api.us-east-1.amazonaws.com/production/copyProtection>

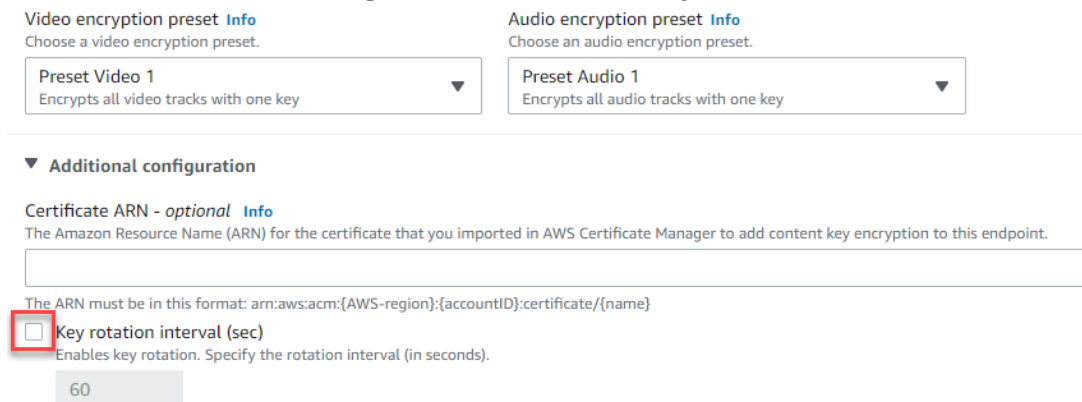
- **Role ARN:** This value is from the **MediaPackage Role ARN** created in **Step 2**.



The screenshot shows the AWS IAM console 'Summary' page for a role named 'MediaPackage'. The 'Role ARN' field is highlighted with a red box and contains the value 'arn:aws:iam::888...78094:role/MediaPackage'. Below the summary, the 'Permissions' tab is selected, showing one attached policy named 'MediaPackageToEZDRM' of type 'Inline policy'.

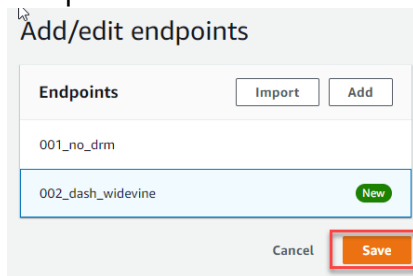
- **SPEKE version:** Select **Version 2.0**

## 11. Under **Additional configuration** uncheck **Key rotation interval (sec)**.



The screenshot shows the 'Additional configuration' section of the AWS MediaPackage console. It includes fields for 'Video encryption preset' (set to 'Preset Video 1') and 'Audio encryption preset' (set to 'Preset Audio 1'). Below these, the 'Certificate ARN' field is empty. The 'Key rotation interval (sec)' checkbox is checked, and the interval is set to '60' seconds. A red box highlights the checkbox.

12. Once these settings are completed, click the **Save** button to create the endpoint.



Add/edit endpoints

| Endpoints         | Import | Add |
|-------------------|--------|-----|
| 001_no_drm        |        |     |
| 002_dash_widevine |        | New |

Cancel Save

13. Now for redundancy, from your second MediaLive channel, create a DASH-ISO endpoint with the same settings as the one we just created, but change the **ID** name to indicate the redundant endpoint.

For this example, we called our first channel **MediaLive1** and created the DASH-ISO endpoint **004\_dash\_playready**. Under **MediaLive2** we will create a duplicate DASH-ISO endpoint but name it **004\_dash\_playready\_2**.

Duplicate ALL the same settings for the second DASH-ISO endpoint under the second channel and click **Save**.

**Note:** It is helpful to have multiple tabs open during this process, for ease of copying settings from one channel to the other.

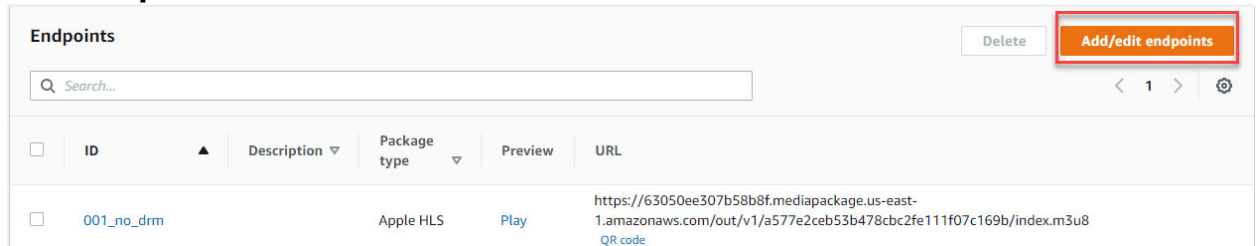
14. Once **MediaLive** is running and publishing to **MediaPackage**, you will be able to access the URL created to play the encrypted Media.



| Endpoint                                    | Format   | Play | URL   |
|---|----------|------|---|
| <input type="checkbox"/> 004_dash_playready | DASH-ISO | Play | https://638b8f.mediapackage.us-east-1.amazonaws.com/out/v1/19fafaC...:f0b165c/dash_playready.mpd<br>QR code |

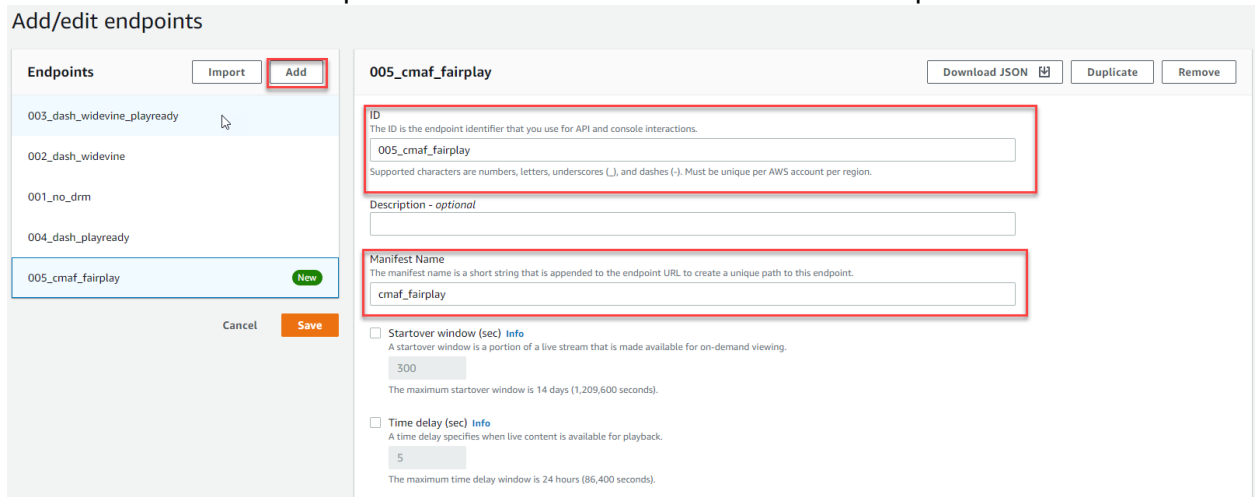
## CMAF Apple HLS Endpoint example

1. In **MediaPackage**, from the first MediaLive channel you created, click the **Add endpoints** button.



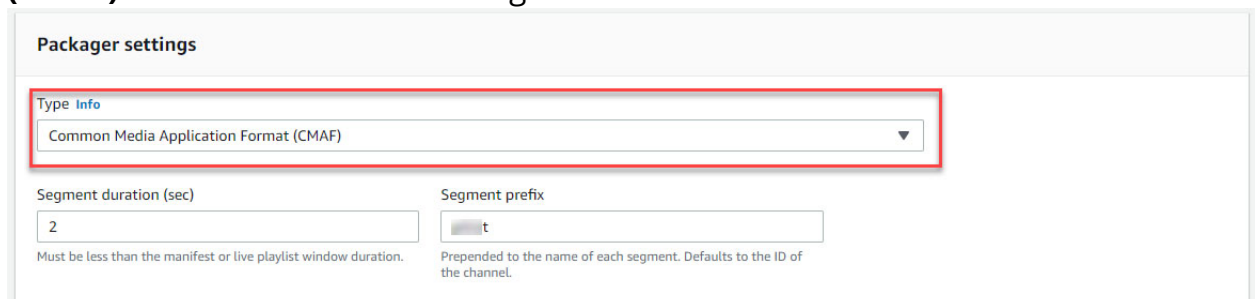
The screenshot shows the 'Endpoints' section of the MediaPackage console. At the top right, there is a 'Delete' button and an 'Add/edit endpoints' button, which is highlighted with a red box. Below this is a search bar. The main part of the image is a table with columns: ID, Description, Package type, Preview, and URL. One endpoint is listed with ID '001\_no\_drm', Description 'Apple HLS', Package type 'Play', and a long URL. A 'QR code' link is also present.

2. Click **Add**. Edit the Endpoint **ID** and **Manifest Name** to a unique identifier.



This screenshot shows the 'Add/edit endpoints' dialog. On the left, a list of endpoints is shown, with '005\_cmaf\_fairplay' selected and highlighted with a green 'New' tag. The 'Add' button is highlighted with a red box. On the right, the form for '005\_cmaf\_fairplay' is shown. The 'ID' field is highlighted with a red box and contains '005\_cmaf\_fairplay'. The 'Manifest Name' field is also highlighted with a red box and contains 'cmaf\_fairplay'. Other fields like 'Description - optional' and 'Startover window (sec)' are visible but not highlighted.

3. Under **Packager Settings**, select the **Common Media Application Format (CMAF)** and leave the other settings as default.



The screenshot shows the 'Packager settings' dialog. The 'Type' dropdown menu is highlighted with a red box and is set to 'Common Media Application Format (CMAF)'. Below this, the 'Segment duration (sec)' is set to '2' and the 'Segment prefix' is set to 't'. Both of these fields have explanatory text below them.

4. Enter the same manifest name for the **HLS Manifest**.

**HLS manifest**

ID

005\_cmaf\_fairplay


Must be unique within the endpoint and it cannot be changed after it is created.

► Additional configuration

5. Scroll down and select the toggle for **Encrypt Content**.

**Package encryption**

☐ No encryption  
This endpoint is not copy-protected.

☒ **Encrypt content** [Info](#)   
The endpoint is copy-protected.

**Resource ID**  
The resource ID is the identifier that you send to the key server to identify this endpoint.

005\_cmaf\_fairplay

Supported characters are numbers, letters, underscores (\_), and dashes (-).

**System IDs** [Info](#)  
A system ID is a unique identifiers for the DRM system to use. Type one per line.

94ce86fb-07ff-4f43-adb8-93d2fa968ca2

Must contain either one or two entries, as defined by the packager type.

**URL**  
The URL for the proxy that you created so AWS Elemental MediaPackage can talk to your key server.

https://i2...e.execute-api.us-east-1.amazonaws.com/production/copyProtection

**Role ARN**  
The Amazon Resource Name (ARN) for the IAM role that you created that allows communication between SPEKE and AWS Elemental MediaPackage.

arn:aws:iam::507...le/MediaPackage

Must be in this format: arn:aws:iam::{accountID}:role/{name}

**SPEKE version** [Info](#)  
Select the version of SPEKE to use for encryption on this endpoint. SPEKE 1.0 is the legacy version that uses CPIX 2.0, and supports single key encryption. SPEKE 2.0 uses CPIX 2.3, and supports multiple key encryption.

Version 2.0

The parameters are as follows:

- **ResourceID**: this will be the ID that references your DRM Keys. This is a required field.

**Note:** The first time you send a ResourceID to run a job, the ID will be tied to the DRM keys for that job. Jobs can use the same ResourceID to reference the same keys or for new DRM Keys send a new ResourceID. It is best not to use a ResourceID from a failed job.

- **System ID:** Unique identifiers for the DRM system to use. These System IDs are industry standard, must be utilized for encryption. Insert the System ID for Apple FairPlay (one ID per line):  
**94ce86fb-07ff-4f43-adb8-93d2fa968ca2**

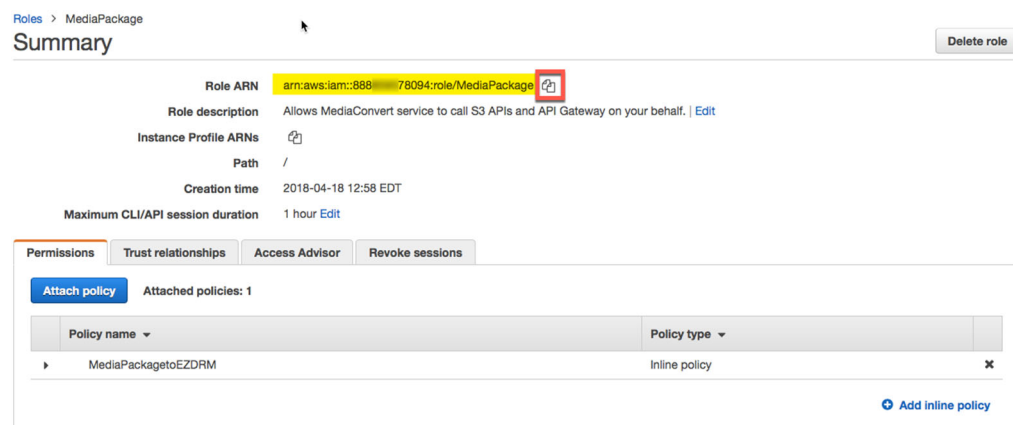
**Note:** The System ID values need to be lowercase.

- **URL:** The URL is the **API URL** copied from **Step 1:**

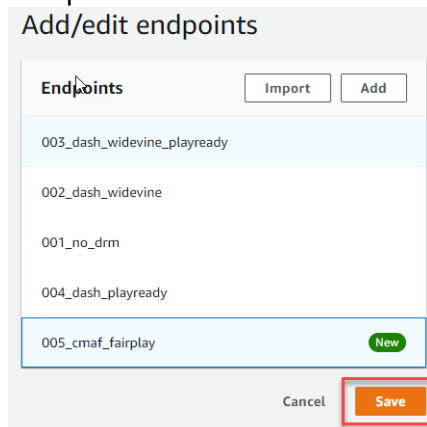
Sample URL:

<https://i2qXXjdb1e.execute-api.us-east-1.amazonaws.com/production/copyProtection>

- **Role ARN:** This value is from the **MediaPackage Role** created in **Step 2.**



6. Once these settings are completed, click the **Save** button to create the endpoint.



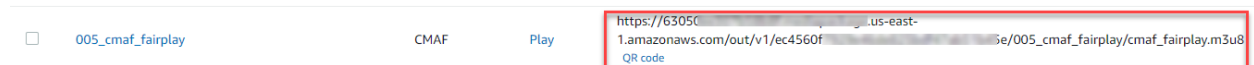
- Now for redundancy, from your second MediaLive channel, create an Apple HLS endpoint with the same settings as the one we just created, but change the **ID** name to indicate the redundant endpoint.

For this example, we called our first channel **MediaLive1** and created the Apple HLS endpoint **005\_cmaf\_fairplay**. Under **MediaLive2** we will create a duplicate Apple HLS endpoint but name it **005\_cmaf\_fairplay\_2**.

Duplicate ALL the same settings for the second CMAF endpoint under the second channel and click **Save**.

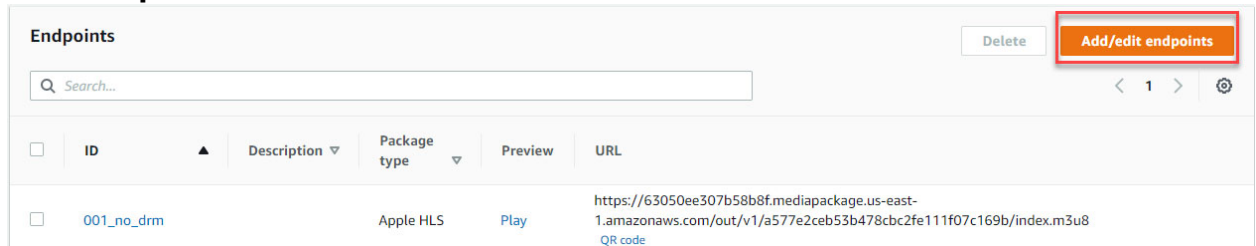
**Note:** *It is helpful to have multiple tabs open during this process, for ease of copying settings from one channel to the other.*

- Once **MediaLive** is running and publishing to **MediaPackage**, you will be able to access the URL created to play the encrypted Media.



## CMAF Widevine & PlayReady Endpoint example

- In **MediaPackage**, from the first MediaLive channel you created, click the **Add endpoints** button.



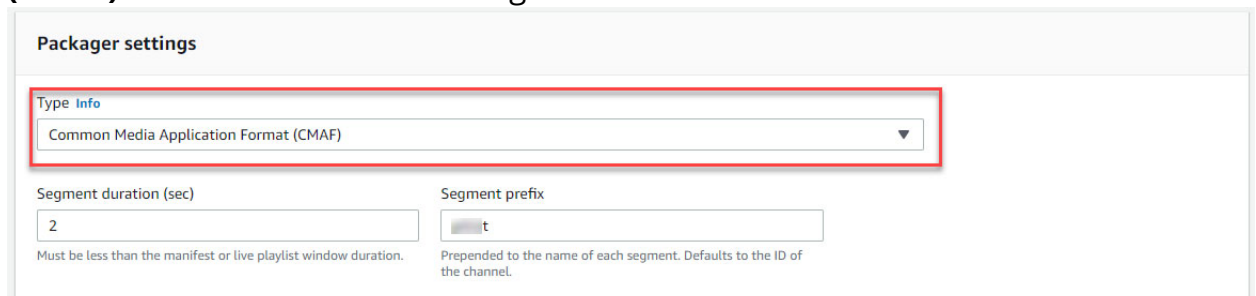
The screenshot shows the 'Endpoints' section of the MediaPackage console. At the top right, there is a 'Delete' button and an 'Add/edit endpoints' button, which is highlighted with a red box. Below this is a search bar. The main part of the image is a table with columns: ID, Description, Package type, Preview, and URL. One row is visible with ID '001\_no\_drm', Package type 'Apple HLS', and a URL starting with 'https://63050ee307b58b8f.mediapackage.us-east-1.amazonaws.com/out/v1/a577e2ceb53b478cbc2fe111f07c169b/index.m3u8'. A 'QR code' link is also present.

- Click **Add**. Edit the Endpoint **ID** and **Manifest Name** to a unique identifier.



The screenshot shows the 'Add/edit endpoints' form. On the left, there is a list of existing endpoints, with '006\_cmaf\_widevine\_playready' selected and marked as 'New'. The main form area is titled '006\_cmaf\_widevine\_playready' and has buttons for 'Download JSON', 'Duplicate', and 'Remove'. The 'ID' field is highlighted with a red box and contains '006\_cmaf\_widevine\_playready'. The 'Manifest Name' field is also highlighted with a red box and contains '006\_cmaf\_widevine\_playready'. There are also fields for 'Description - optional', 'Startover window (sec)' (set to 300), and 'Time delay (sec)' (set to 5).

- Under **Packager Settings**, select the **Common Media Application Format (CMAF)** and leave the other settings as default.



The screenshot shows the 'Packager settings' form. The 'Type' dropdown menu is highlighted with a red box and is set to 'Common Media Application Format (CMAF)'. Below this, there are two input fields: 'Segment duration (sec)' set to '2' and 'Segment prefix' set to 't'. There are also informational text blocks for each of these fields.



9. Enter the same manifest name for the **HLS Manifest**.

### HLS manifest

ID


Must be unique within the endpoint and it cannot be changed after it is created.

► **Additional configuration**

10. Scroll down and select the toggle for **Encrypt Content**.

### Package encryption

☐ No encryption  
This endpoint is not copy-protected.

☒ **Encrypt content** [Info](#)  
The endpoint is copy-protected. 

**Resource ID**  
The resource ID is the identifier that you send to the key server to identify this endpoint.

Supported characters are numbers, letters, underscores (\_), and dashes (-).

**System IDs** [Info](#)  
A system ID is a unique identifiers for the DRM system to use. Type one per line.



Must contain either one or two entries, as defined by the packager type.

**URL**  
The URL for the proxy that you created so AWS Elemental MediaPackage can talk to your key server.

**Role ARN**  
The Amazon Resource Name (ARN) for the IAM role that you created that allows communication between SPEKE and AWS Elemental MediaPackage.

Must be in this format: arn:aws:iam::[accountID]:role/{name}

**SPEKE version** [Info](#)  
Select the version of SPEKE to use for encryption on this endpoint. SPEKE 1.0 is the legacy version that uses CPIX 2.0, and supports single key encryption. SPEKE 2.0 uses CPIX 2.3, and supports multiple key encryption.

Version 2.0 ▼

The parameters are as follows:

- **ResourceID**: this will be the ID that references your DRM Keys. This is a required field.

**Note:** The first time you send a ResourceID to run a job, the ID will be tied to the DRM keys for that job. Jobs can use the same ResourceID to reference the same keys or for new DRM Keys send a new ResourceID. It is best not to use a ResourceID from a failed job.

- **System ID:** Unique identifiers for the DRM system to use. These System IDs are industry standard, must be utilized for encryption. Insert the System ID's for Widevine and PlayReady, one ID per line:  
(Widevine) **edef8ba9-79d6-4ace-a3c8-27dcd51d21ed**  
(PlayReady) **9a04f079-9840-4286-ab92-e65be0885f95**

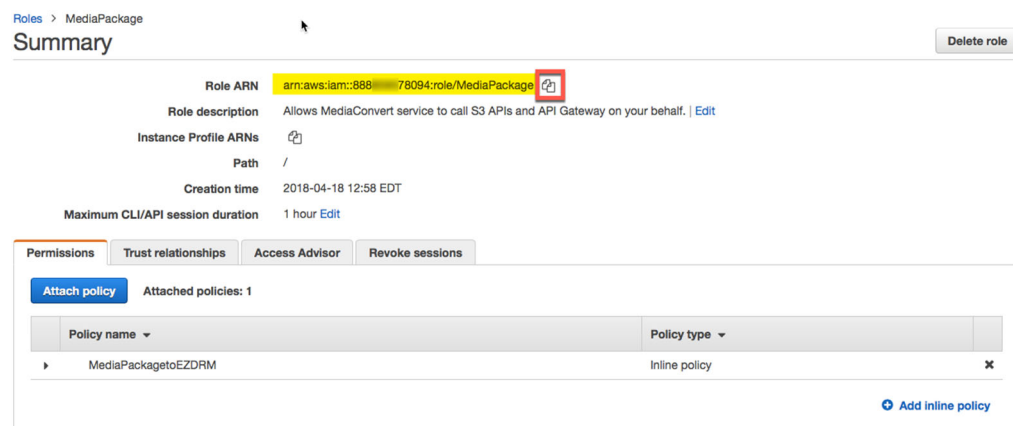
**Note:** The System ID values need to be lowercase.

- **URL:** The URL is the **API URL** copied from **Step 1:**

Sample URL:

<https://i2qXXjdb1e.execute-api.us-east-1.amazonaws.com/production/copyProtection>

- **Role ARN:** This value is from the **MediaPackage Role** created in **Step 2.**



Roles > MediaPackage

Summary Delete role

Role ARN: **arn:aws:iam::888-78094:role/MediaPackage**

Role description: Allows MediaConvert service to call S3 APIs and API Gateway on your behalf. | [Edit](#)

Instance Profile ARNs: [+](#)

Path: /

Creation time: 2018-04-18 12:58 EDT

Maximum CLI/API session duration: 1 hour [Edit](#)

Permissions Trust relationships Access Advisor Revoke sessions

[Attach policy](#) Attached policies: 1

| Policy name         | Policy type   |
|---------------------|---------------|
| MediaPackageToEZDRM | Inline policy |

[Add inline policy](#)

9. Once these settings are completed, click the **Save** button to create the endpoint.

10. Now for redundancy, from your second MediaLive channel, create an Apple HLS endpoint with the same settings as the one we just created, but change the **ID** name to indicate the redundant endpoint.

For this example, we called our first channel **MediaLive1** and created the Apple HLS endpoint **006\_cmaf\_widevine\_playready**. Under **MediaLive2** we will create a duplicate Apple HLS endpoint but name it **006\_cmaf\_widevine\_playready\_2**.

Duplicate ALL the same settings for the second CMAF endpoint under the second channel and click **Save**.

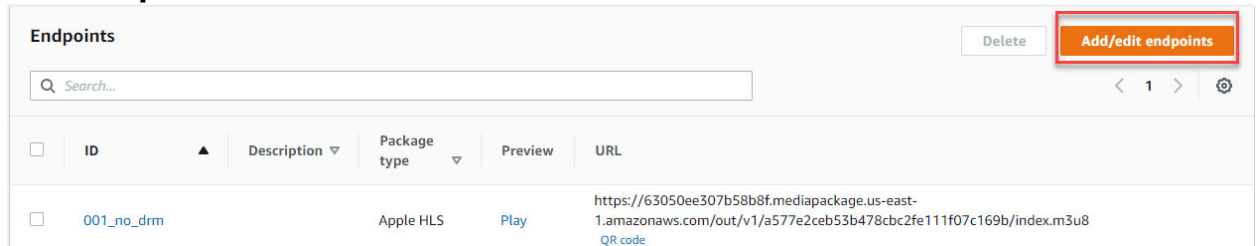
**Note:** *It is helpful to have multiple tabs open during this process, for ease of copying settings from one channel to the other.*

11. Once **MediaLive** is running and publishing to **MediaPackage**, you will be able to access the URL created to play the encrypted Media.



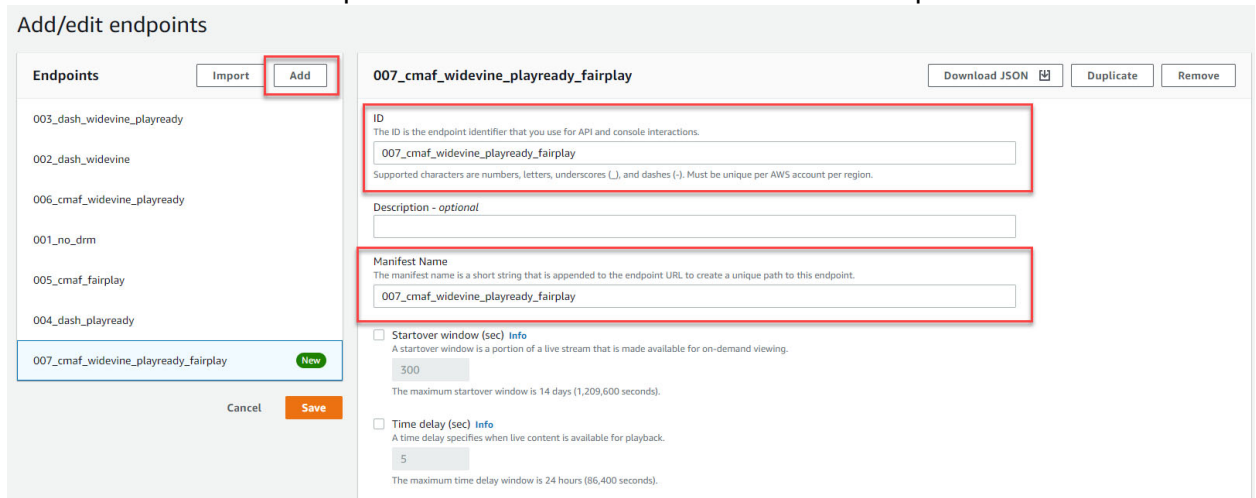
## CMAF Widevine, PlayReady & Apple FairPlay Endpoint example

1. In **MediaPackage**, from the first MediaLive channel you created, click the **Add endpoints** button.



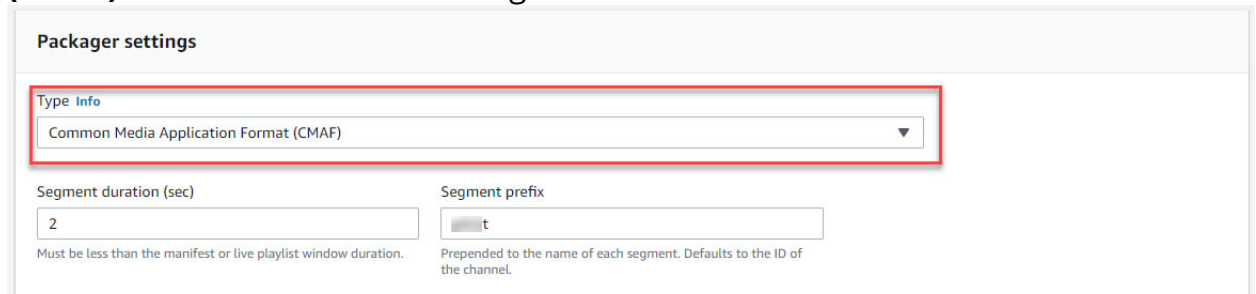
The screenshot shows the 'Endpoints' section of the MediaPackage console. At the top right, there is a 'Delete' button and a red-bordered 'Add/edit endpoints' button. Below this is a search bar. The main area is a table with columns: ID, Description, Package type, Preview, and URL. One endpoint is listed with ID '001\_no\_drm', Package type 'Apple HLS', and a URL starting with 'https://63050ee307b58b8f.mediapackage.us-east-1.amazonaws.com/out/v1/a577e2ceb53b478cbc2fe111f07c169b/index.m3u8'. A 'QR code' link is also present.

2. Click **Add**. Edit the Endpoint **ID** and **Manifest Name** to a unique identifier.



The screenshot shows the 'Add/edit endpoints' form. On the left is a list of existing endpoints. The 'Add' button is highlighted with a red box. The main form area is titled '007\_cmaf\_widevine\_playready\_fairplay'. It has fields for 'ID' (containing '007\_cmaf\_widevine\_playready\_fairplay') and 'Manifest Name' (containing '007\_cmaf\_widevine\_playready\_fairplay'), both highlighted with red boxes. Below these are checkboxes for 'Startover window (sec)' and 'Time delay (sec)', each with a value field and explanatory text.

3. Under **Packager Settings**, select the **Common Media Application Format (CMAF)** and leave the other settings as default.



The screenshot shows the 'Packager settings' form. The 'Type' dropdown menu is highlighted with a red box and is set to 'Common Media Application Format (CMAF)'. Below this are two input fields: 'Segment duration (sec)' with a value of '2' and 'Segment prefix' with a value of 't'. Explanatory text is provided for both fields.

4. Enter the same manifest name for the **HLS Manifest**.

### HLS manifest

ID

Must be unique within the endpoint and it cannot be changed after it is created.

► **Additional configuration**

5. Scroll down and select the toggle for **Encrypt Content**.

### Package encryption

☐ No encryption  
This endpoint is not copy-protected.

☒ **Encrypt content** [Info](#)  
The endpoint is copy-protected.

**Resource ID**  
The resource ID is the identifier that you send to the key server to identify this endpoint.

Supported characters are numbers, letters, underscores (\_), and dashes (-).

**System IDs** [Info](#)  
A system ID is a unique identifiers for the DRM system to use. Type one per line.

Must contain either one or two entries, as defined by the packager type.

**URL**  
The URL for the proxy that you created so AWS Elemental MediaPackage can talk to your key server.

**Role ARN**  
The Amazon Resource Name (ARN) for the IAM role that you created that allows communication between SPEKE and AWS Elemental MediaPackage.

Must be in this format: arn:aws:iam:[accountID]:role/(name)

**SPEKE version** [Info](#)  
Select the version of SPEKE to use for encryption on this endpoint. SPEKE 1.0 is the legacy version that uses CPIX 2.0, and supports single key encryption. SPEKE 2.0 uses CPIX 2.3, and supports multiple key encryption.

The parameters are as follows:

- **ResourceID**: this will be the ID that references your DRM Keys. This is a required field.

**Note:** The first time you send a ResourceID to run a job, the ID will be tied to the DRM keys for that job. Jobs can use the same ResourceID to reference the same keys or for new DRM Keys send a new ResourceID. It is best not to use a ResourceID from a failed job.

- **System ID:** Unique identifiers for the DRM system to use. These System IDs are industry standard, must be utilized for encryption. Insert the System ID's for Widevine, PlayReady and FairPlay, one ID per line:  
 (Widevine) **edef8ba9-79d6-4ace-a3c8-27dcd51d21ed**  
 (PlayReady) **9a04f079-9840-4286-ab92-e65be0885f95**  
 (FairPlay) **94ce86fb-07ff-4f43-adb8-93d2fa968ca2**

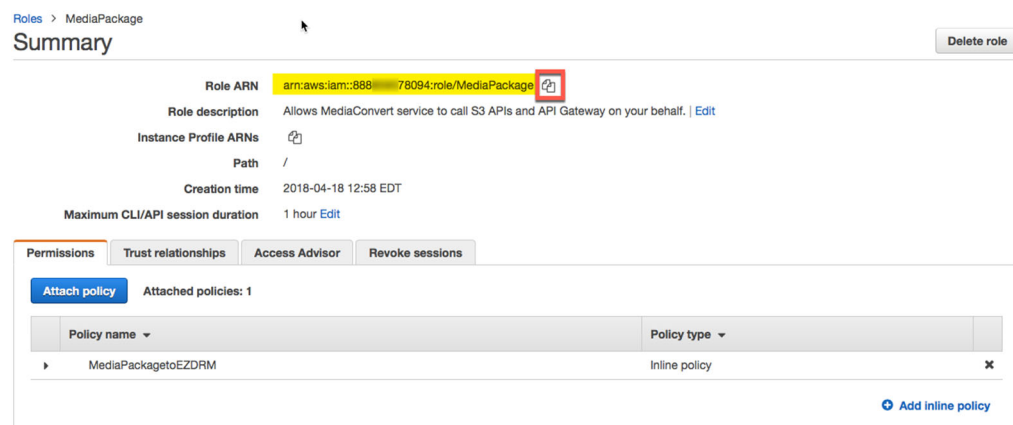
**Note:** The System ID values need to be lowercase.

- **URL:** The URL is the **API URL** copied from **Step 1:**

Sample URL:

<https://i2qXXjdb1e.execute-api.us-east-1.amazonaws.com/production/copyProtection>

- **Role ARN:** This value is from the **MediaPackage Role** created in **Step 2.**



12. Once these settings are completed, click the **Save** button to create the endpoint.

13. Now for redundancy, from your second MediaLive channel, create an Apple HLS endpoint with the same settings as the one we just created, but change the **ID** name to indicate the redundant endpoint.

For this example, we called our first channel **MediaLive1** and created the Apple HLS endpoint **007\_cmaf\_widevine\_playready\_fairplay**. Under **MediaLive2** we will create a duplicate Apple HLS endpoint but name it **007\_cmaf\_widevine\_playready\_fairplay\_2**.

Duplicate ALL the same settings for the second CMAF endpoint under the second channel and click **Save**.

***Note:** It is helpful to have multiple tabs open during this process, for ease of copying settings from one channel to the other.*

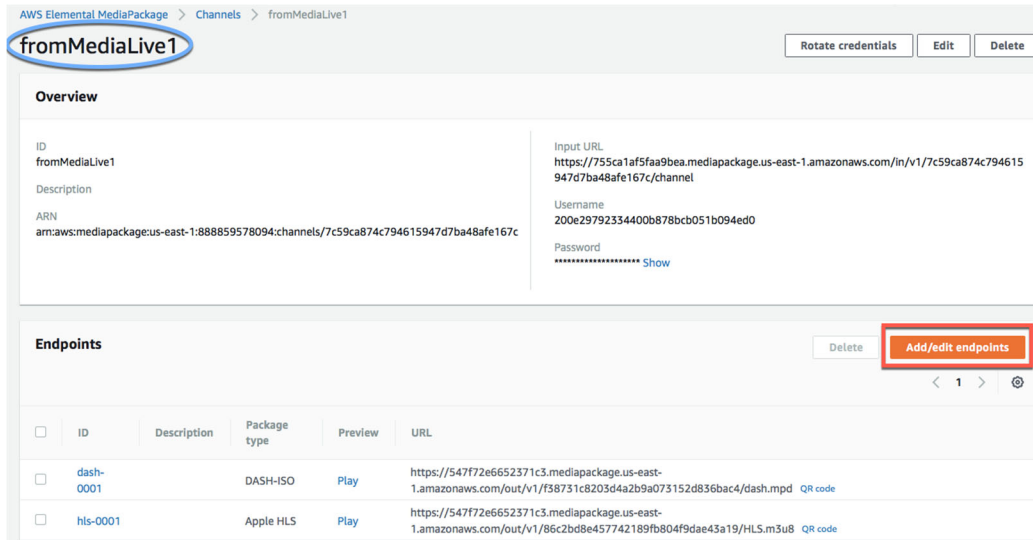
14. Once **MediaLive** is running and publishing to **MediaPackage**, you will be able to access the URL created to play the encrypted Media.

---

[https://630f1b8f.mediapackage.us-east-1.amazonaws.com/out/v1/603efaa91129410072/007\\_cmaf\\_widevine\\_playready\\_fairplay/007\\_cmaf\\_widevine\\_playready\\_fairplay.m3u8](https://630f1b8f.mediapackage.us-east-1.amazonaws.com/out/v1/603efaa91129410072/007_cmaf_widevine_playready_fairplay/007_cmaf_widevine_playready_fairplay.m3u8)  
QR code

## Microsoft Smooth Streaming Endpoint

1. In **MediaPackage**, from the first MediaLive channel you created, click the **Add endpoints** button.



AWS Elemental MediaPackage > Channels > fromMediaLive1

**fromMediaLive1** Rotate credentials Edit Delete

**Overview**

ID: fromMediaLive1

Description:

ARN: arn:aws:mediapackage:us-east-1:888859578094:channels/7c59ca874c794615947d7ba48afe167c

Input URL: https://755ca1af5faa9bea.mediapackage.us-east-1.amazonaws.com/in/v1/7c59ca874c794615947d7ba48afe167c/channel

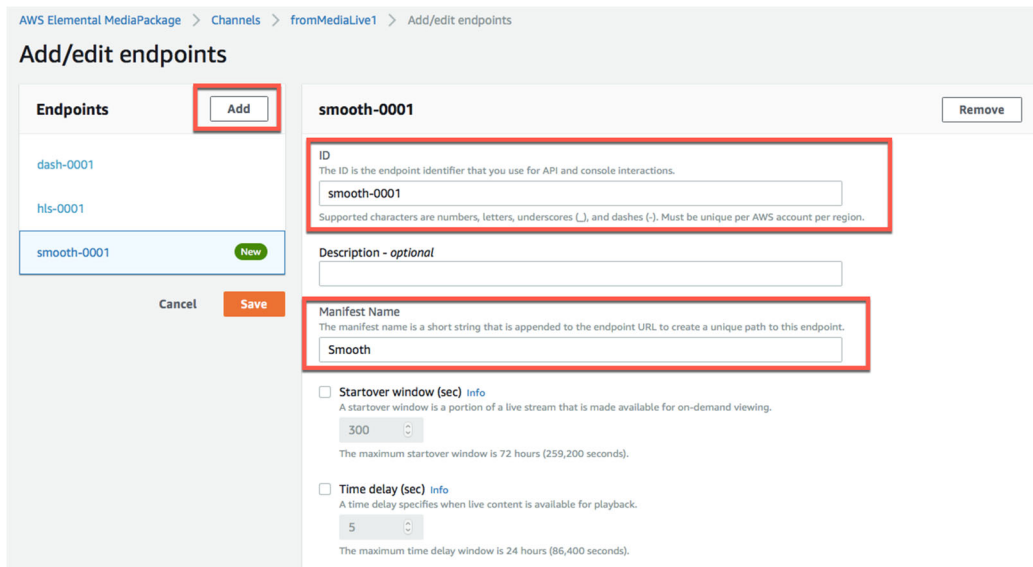
Username: 200e29792334400b878bc051b094ed0

Password: \*\*\*\*\* Show

**Endpoints** Delete Add/edit endpoints

| ID        | Description | Package type | Preview | URL  |
|-----------|-------------|--------------|---------|--|
| dash-0001 |             | DASH-ISO     | Play    | https://547f72e6652371c3.mediapackage.us-east-1.amazonaws.com/out/v1/f38731c8203d4a2b9a073152d836bac4/dash.mpd QR code |
| hls-0001  |             | Apple HLS    | Play    | https://547f72e6652371c3.mediapackage.us-east-1.amazonaws.com/out/v1/86c2bd8e457742189fb804f9dae43a19/HLS.m3u8 QR code |

2. Click the **Add** button. Edit the Endpoint **ID** and **Manifest Name** to a unique identifier.



AWS Elemental MediaPackage > Channels > fromMediaLive1 > Add/edit endpoints

**Add/edit endpoints**

**Endpoints** Add

dash-0001

hls-0001

smooth-0001 New

Cancel Save

**smooth-0001** Remove

**ID**  
The ID is the endpoint identifier that you use for API and console interactions.  
smooth-0001  
Supported characters are numbers, letters, underscores (\_), and dashes (-). Must be unique per AWS account per region.

**Description - optional**

**Manifest Name**  
The manifest name is a short string that is appended to the endpoint URL to create a unique path to this endpoint.  
Smooth

☐ **Startover window (sec)** Info  
A startover window is a portion of a live stream that is made available for on-demand viewing.  
300  
The maximum startover window is 72 hours (259,200 seconds).

☐ **Time delay (sec)** Info  
A time delay specifies when live content is available for playback.  
5  
The maximum time delay window is 24 hours (86,400 seconds).



- Under **Packager Settings**, select the **Type Smooth** and **Segment duration (sec)** to **20** seconds.

### Packager settings

Type [Info](#)  

Microsoft Smooth

Segment duration (sec)  

20

Manifest window duration (sec)  

60

Must be less than the manifest or playlist window duration.

- Scroll down and select the toggle for **Encrypt Content**.

### Package encryption

☐ No encryption  
This endpoint is not copy-protected.
 ☒ **Encrypt content** [Info](#)  
The endpoint is copy-protected.

Resource ID  
The resource ID is the identifier that you send to the key server to identify this endpoint.  

smooth\_001

Supported characters are numbers, letters, underscores (\_), and dashes (-).

System IDs [Info](#)  
A system ID is a unique identifiers for the DRM system to use. Type one per line.  

9a04f079-9840-4286-ab92-e65be0885f95

Must contain either one or two entries, as defined by the packager type.

URL  
The URL for the proxy that you created so AWS Elemental MediaPackage can talk to your key server.  

https://i2.amazonaws.com/1e.execute-api.us-east-1.amazonaws.com/production/copyProtection

Role ARN  
The Amazon Resource Name (ARN) for the IAM role that you created that allows communication between SPEKE and AWS Elemental MediaPackage.  

arn:aws:iam::501234567890:role/MediaPackage

Must be in this format: arn:aws:iam::{accountID}:role/{name}

The parameters are as follows:

- ResourceID**: this will be the ID that references your DRM Keys. This is a required field.

**Note:** The first time you send a ResourceID to run a job, the ID will be tied to the DRM keys for that job. Jobs can use the same ResourceID to reference the same keys or for new DRM Keys send a new ResourceID. It is best not to use a ResourceID from a failed job.

- **System ID:** Unique identifiers for the DRM system to use. These System IDs are industry standard, must be utilized for encryption. Insert the System ID for Smooth Streaming (uses PlayReady's System ID), one ID per line:

**9a04f079-9840-4286-ab92-e65be0885f95**

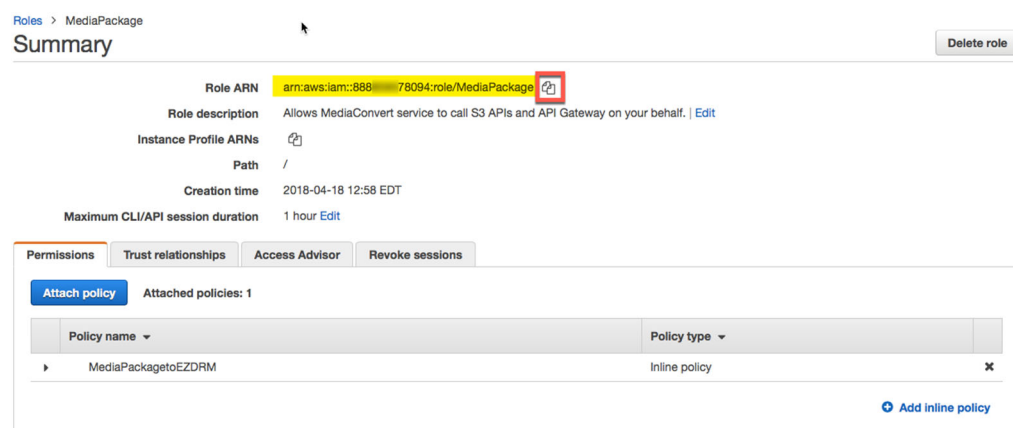
**Note:** The System ID values need to be lowercase.

- **URL:** The URL is the **API URL** copied from **Step 1:**

Sample URL:

<https://i2qXXjdb1e.execute-api.us-east-1.amazonaws.com/production/copyProtection>

- **Role ARN:** This value is from the **MediaPackage Role** created in **Step 2.**



5. Once these settings are completed, click the **Save** button to create the endpoint.

6. Now for redundancy, from your second MediaLive channel, create an Smooth Streaming endpoint with the same settings as the one we just created, but change the **ID** name to indicate the redundant endpoint.

For this example, we called our first channel **MediaLive1** and created the Smooth Streaming endpoint **smooth-001**. Under **MediaLive2** we will create a duplicate Smooth Streaming endpoint but name it **smooth-002**.

Duplicate ALL the same settings for the second Smooth Streaming endpoint under the second channel and click **Save**.

**Note:** *It is helpful to have multiple tabs open during this process, for ease of copying settings from one channel to the other.*

7. Once **MediaLive** is running and publishing to **MediaPackage**, you will be able to access the URL created to play the DRM encrypted Media.



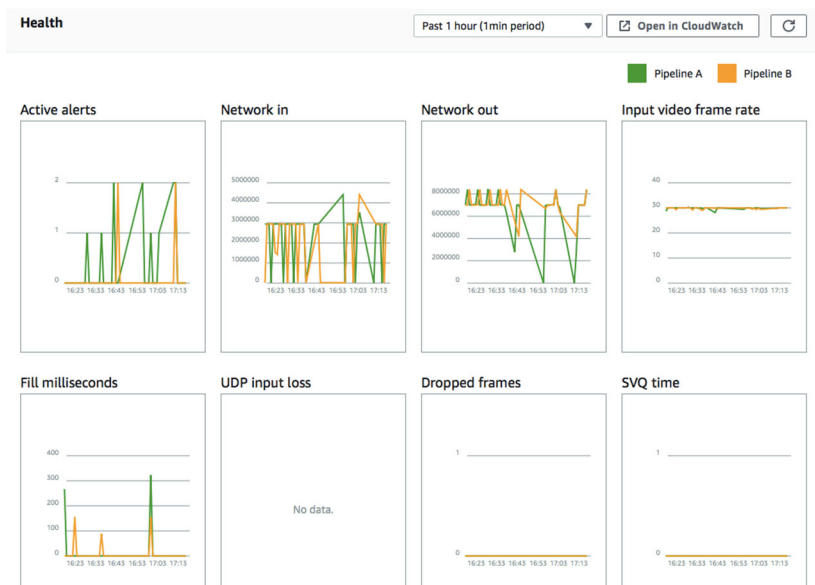
The screenshot shows a browser address bar with the following URL: <https://6305b8f.mediapackage.us-east-1.amazonaws.com/out/v1/37d86786b4/index.ism/Manifest>. Above the address bar, there are tabs labeled 'smooth\_001', 'smooth\_001', and 'Microsoft Smooth'. A 'Play' button is visible next to the 'Microsoft Smooth' tab.

## Step 5 - Starting a MediaLive Channel

Open **MediaLive** and select the channel. Click the **Start** button to start the channel.

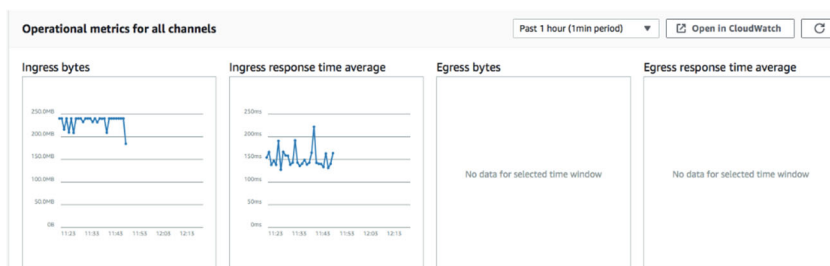


Once the channel is started, data for the stream will be shown in the **Health** section.



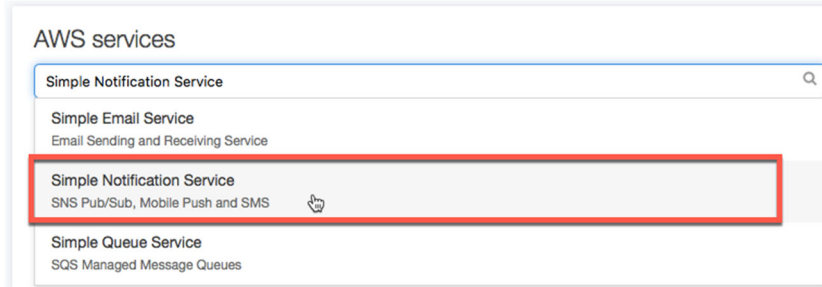
If Input video frame rate is ever not running, you know that there is a problem with the stream.

Same on the **MediaPackage** side, there will be data showing under Operational metrics.

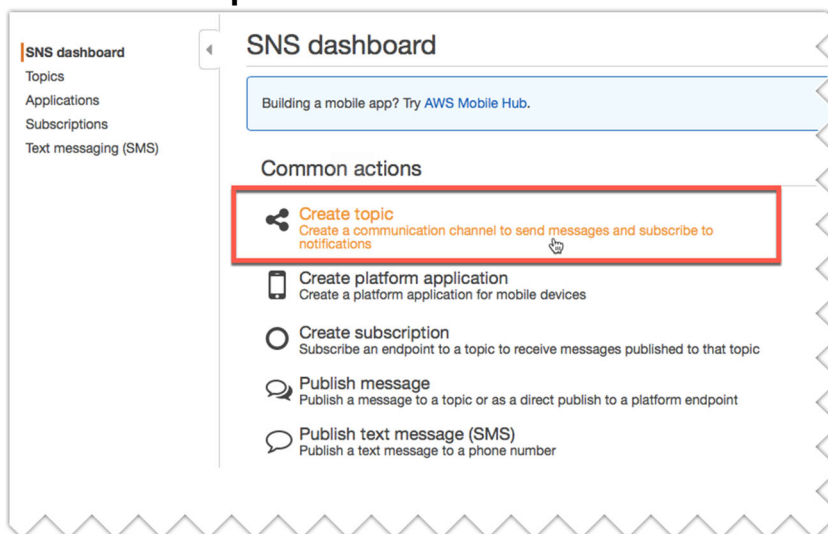


## Appendix 1 – Error Log Set-up

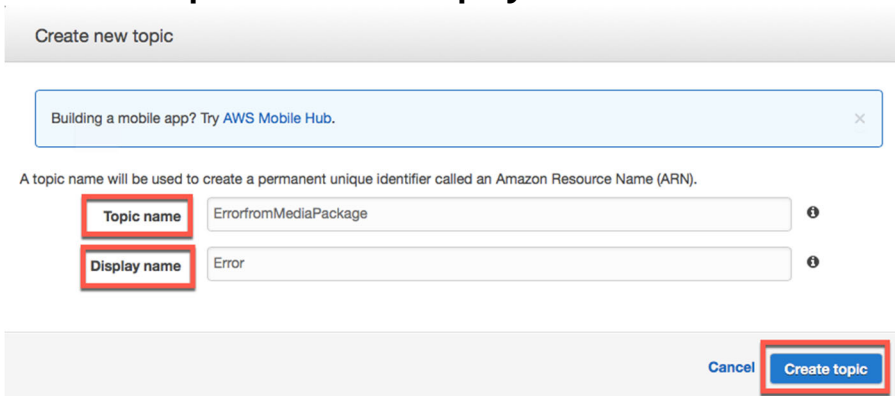
1. To set up an error log, go to **Simple Notification Service** in AWS.



2. Click **Create topic** from the SNS dashboard.

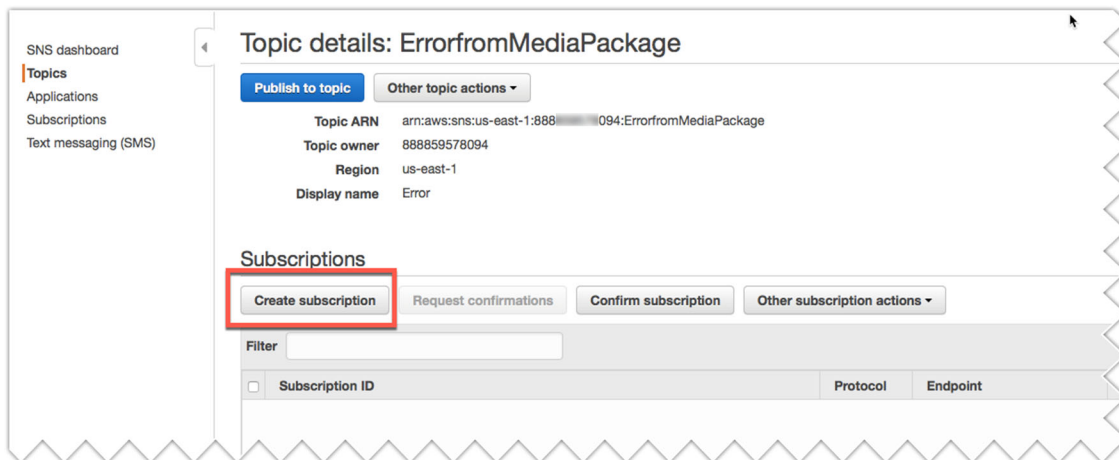


3. Enter the **Topic name** and **Display name** and click **Create topic**.

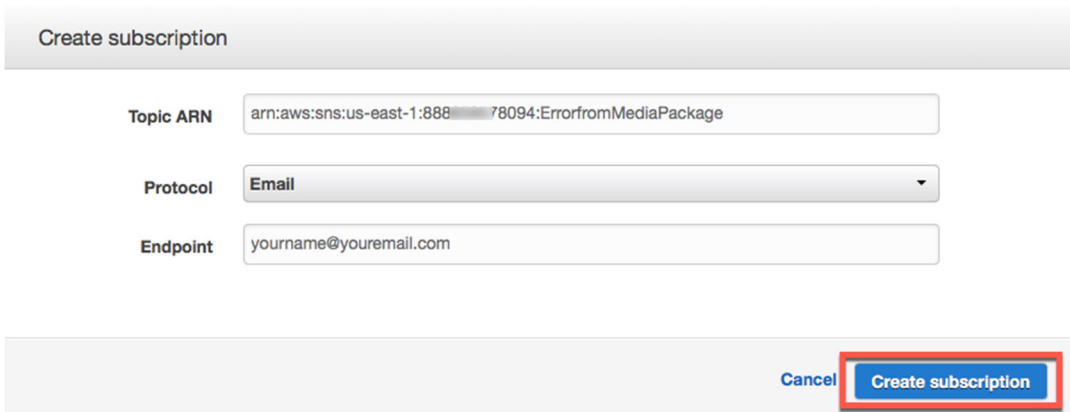


A screenshot of the 'Create new topic' form in the AWS SNS console. At the top, there's a header 'Create new topic' and a blue banner with the text 'Building a mobile app? Try AWS Mobile Hub.' Below this, a note states: 'A topic name will be used to create a permanent unique identifier called an Amazon Resource Name (ARN).' There are two input fields: 'Topic name' with the value 'ErrorfromMediaPackage' and 'Display name' with the value 'Error'. Both input fields are highlighted with red rectangular boxes. At the bottom right of the form, there are two buttons: 'Cancel' and 'Create topic', with the 'Create topic' button highlighted by a red rectangular box.

- The Topic details will open, then click **Create subscription**.



- Change the **Protocol** to **Email** and enter the **email address** in the **Endpoint** field. Click **Create subscription**.



The screenshot shows the 'Create subscription' form. At the top is a header bar with the text 'Create subscription'. Below it are three input fields: 'Topic ARN' (pre-filled with 'arn:aws:sns:us-east-1:888...78094:ErrorfromMediaPackage'), 'Protocol' (a dropdown menu currently showing 'Email'), and 'Endpoint' (pre-filled with 'yourname@youremail.com'). At the bottom right of the form, there are two buttons: 'Cancel' and 'Create subscription'. The 'Create subscription' button is highlighted with a red rectangular box.

- There will now be a **Pending Confirmation** line item, and an email will be sent to confirm the subscription.

#### Topic details: ErrorfromMediaPackage

**Publish to topic** **Other topic actions**

Topic ARN: arn:aws:sns:us-east-1:888859578094:ErrorfromMediaPackage  
 Topic owner: 888859578094  
 Region: us-east-1  
 Display name: Error

**Subscriptions**

**Create subscription** **Request confirmations** **Confirm subscription** **Other subscription actions**

Filter:

| Subscription ID                              | Protocol | Endpoint               | Subscriber |
|--|----------|------------------------|------------|
| <input type="checkbox"/> PendingConfirmation | email    | yourname@youremail.com |            |

- Next, open **CloudWatch** under AWS Services

**aws** **Services** **Resource Groups**

**History**

- Simple Notification Service
- Console Home
- MediaLive
- MediaPackage
- IAM

**CloudWatch**  
Monitor Resources and Applications

EC2  
Lightsail  
Elastic Container Service

CodeStar  
CodeComm  
CodeBuild

- Under the **Rules** menu, click **Create rule**.

**aws** **Services** **Resource Groups**

**CloudWatch**  
Dashboards  
Alarms  
Billing  
Events  
Logs  
Metrics  
Favorites

**Rules**

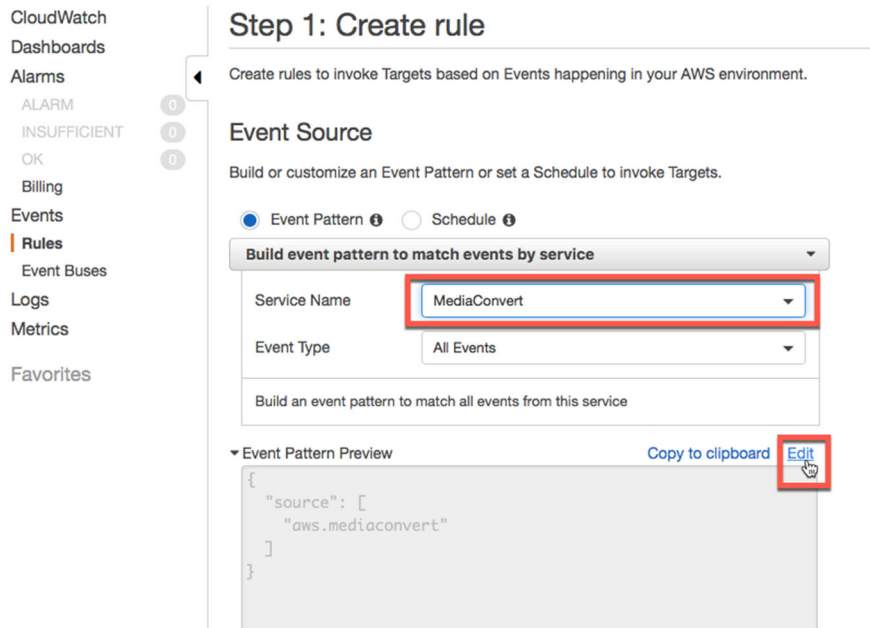
Rules route events from your AWS resources for processing by selected targets. You can create, edit, or delete rules.

**Create rule** **Actions**

Status: All Name:

| Status   | Name              |
|--|-------------------|
| <input type="radio"/> <span style="color: green;">●</span> | MediaPackageEvent |
| <input type="radio"/> <span style="color: green;">●</span> | errorfromMP       |

- Select the **Service Name: MediaConvert** (there isn't currently an option for MediaPackage) and click the **Edit** link.



**Step 1: Create rule**

Create rules to invoke Targets based on Events happening in your AWS environment.

**Event Source**

Build or customize an Event Pattern or set a Schedule to invoke Targets.

☒ Event Pattern ⓘ ☐ Schedule ⓘ

**Build event pattern to match events by service**

Service Name: **MediaConvert**

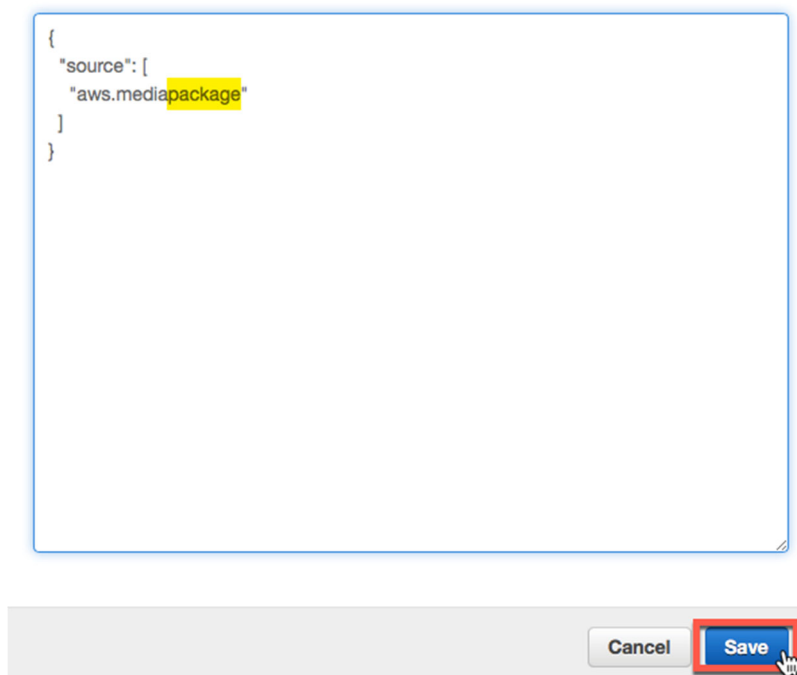
Event Type: All Events

Build an event pattern to match all events from this service

**Event Pattern Preview** [Copy to clipboard](#) [Edit](#)

```
{
  "source": [
    "aws.mediaconvert"
  ]
}
```

- Update "aws.mediaconvert" to **"aws.mediapackage"** and click **Save**.



```
{
  "source": [
    "aws.mediapackage"
  ]
}
```

[Cancel](#) [Save](#)



## 11. Under Targets, click **Add target**.

### Step 1: Create rule

Create rules to invoke Targets based on Events happening in your AWS environment.

#### Event Source

Build or customize an Event Pattern or set a Schedule to invoke Targets.

☒ Event Pattern *i* ☐ Schedule *i*

Build custom event pattern

```
{
  "source": [
    "aws.mediapackage"
  ]
}
```

#### Targets

Select Target to invoke when an event matches your Event Pattern or when schedule is triggered.

**Add target\***

## 12. Select **SNS Topic** from the dropdown and select the **Topic** you created in Step 3, for this example "ErrorfromMediaPackage". Then click the **Configure details** button.

### Step 1: Create rule

Create rules to invoke Targets based on Events happening in your AWS environment.

#### Event Source

Build or customize an Event Pattern or set a Schedule to invoke Targets.

☒ Event Pattern *i* ☐ Schedule *i*

Build custom event pattern

```
{
  "source": [
    "aws.mediapackage"
  ]
}
```

► Show sample event(s)

\* Required

#### Targets

Select Target to invoke when an event matches your Event Pattern or when schedule is triggered.

**SNS topic** *i*

Topic\* ErrorfromMediaPackage

► Configure input

**Add target\***

Cancel

**Configure details**

## 13. Enter a **Name** for the rule and click **Create rule**.

### Step 2: Configure rule details

#### Rule definition

Name\* ErrorfromMP

Description

State ☒ Enabled

CloudWatch Events will add necessary permissions for target(s) so they can be invoked when this rule is triggered.

\* Required

Cancel

Back

**Create rule**

You will now get an error message in the event that there is a connection issue.

Original Posted on December 30, 2021