



# DistroTV Studio Getting Started: Building a New Channel

**GETTING STARTED GUIDE** 

**DISTROSCALE** 

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# Chapter 1. Introduction

Welcome to the DistroTV Studio Getting Started Guide.

DistroTV Studio allows you to build a full-suite linear streaming HLS channel equipped with ad markers and accompanying EPG.

The purpose of this document is to provide a complete, hands-on walkthrough for launching your first FAST channel using the sample content provided.

In this guide, you will learn how to:

- Correctly configure the necessary AWS services, including an S3 Bucket, IAM permissions, and Security Groups.
- Launch and initialize the DistroTV Studio and DistroTV Studio Transcoder EC2 instances from AWS Marketplace AMIs.
- Ingest sample video metadata and set up a basic channel schedule.
- Launch and verify that your first channel is live and streaming.
- By the end of this guide, you will have a functional FAST channel with ad break markers and the foundational knowledge to begin building custom channels with your own media.
   For advanced configurations and detailed instructions on using your own content, please refer to our comprehensive **User Guide**.

#### **Prerequisites**

Before you begin, you should have:

- An active AWS account with permissions to create S3 buckets, IAM roles and policies, and EC2 instances.
- Basic familiarity with navigating the AWS Management Console.

# Chapter 2. Setting Up the AWS Environment

## 1. Creating an S3 Bucket

- Open AWS console and navigate to \$3 service
- Click "Create a bucket" button

## Create a bucket

Every object in S3 is stored in a bucket. To upload files and folders to S3, you'll need to create a bucket where the objects will be stored.

#### Create bucket

- Apply the following settings: (if an option is not mentioned, keep it on the default value)
  - Bucket type: "General purpose"
  - Object Ownership: "ACLs enabled"
  - Uncheck "Block all public access"
    - Check "I acknowledge that the current settings might result in this bucket and the objects within becoming public."
- Click "Create Bucket" button
- Note the name of your bucket as you will be using this in later steps.

#### General configuration

#### **AWS Region**

US West (Oregon) us-west-2

#### Bucket type Info



#### General purpose

Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.

#### Directory

Recommended for low-latency use cases. These buckets use only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.

#### Bucket name Info

distrotv-studio-getting-started (choose your own unique name)

Bucket names must be 3 to 63 characters and unique within the global namespace. Bucket names must also begin and end with a letter or number. Valid characters are a-z, 0-9, periods (.), and hyphens (-). Learn More [7]

#### Object Ownership Info

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

ACLs disabled (recommended)

All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

#### ACLs enabled

Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

We recommend disabling ACLs, unless you need to control access for each object individually or to have the object writer own the data they upload. Using a bucket policy instead of ACLs to share data with users outside of your account simplifies permissions management and auditing.

#### Object Ownership

Bucket owner preferred

If new objects written to this bucket specify the bucket-owner-full-control canned ACL, they are owned by the bucket owner. Otherwise, they are owned by the object writer.

Object writer

The object writer remains the object owner.

#### **Block Public Access settings for this bucket**

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or a access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public ac public access. If you require some level of public access to this bucket or objects within, you can customize the individual se

Block all public access

Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.

Block public access to buckets and objects granted through new access control lists (ACLs)

S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs resources using ACLs.

Block public access to buckets and objects granted through any access control lists (ACLs)

S3 will ignore all ACLs that grant public access to buckets and objects.

Block public access to buckets and objects granted through new public bucket or access point policies

S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any exi

Block public and cross-account access to buckets and objects through any public bucket or access point policies S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and object

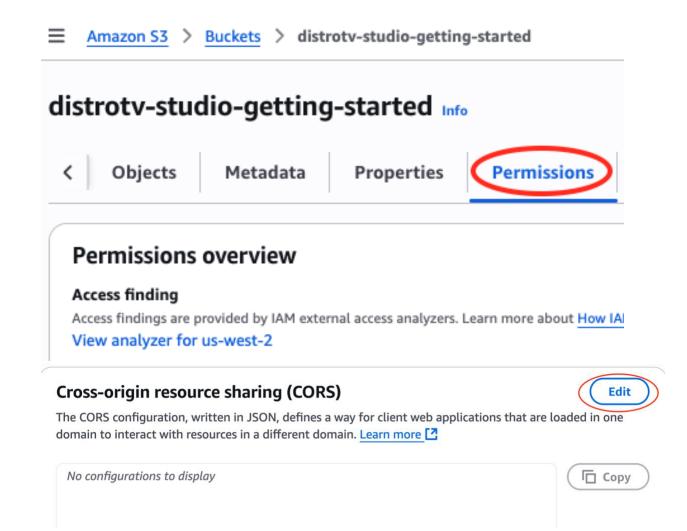
Turning off block all public access might result in this bucket and the objects within becoming public AWS recommends that you turn on block all public access, unless public access is required for specific and verified us

✓ I acknowledge that the current settings might result in this bucket and the objects within becoming public.

## 2. Edit Bucket Permissions

- Navigate to the S3 bucket you just created
- Select the "Permissions" tab to configure its access settings.
- In the "Permissions" tab, scroll down to "Cross-origin resource sharing (CORS)"
- Select "Edit" in the top right of the CORS box
- Paste the following into the text box

- Click "Save changes" button
- Consider leaving this AWS S3 tab open in your browser as you will need to reference your bucket name in the following steps



# **Cross-origin resource sharing (CORS)**

The CORS configuration, written in JSON, defines a wa

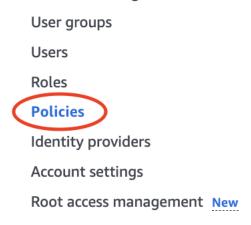
```
1 ▼ [
         {
 2 ▼
 3 ▼
             "AllowedHeaders": [
 4
 5
             ],
             "AllowedMethods": [
 6▼
 7
                 "GET",
                 "HEAD"
 8
 9
             "AllowedOrigins": [
10 ▼
                 "*"
11
12
             ],
13
             "ExposeHeaders": [],
             "MaxAgeSeconds": 3000
14
15
        }
16
```

# Chapter 3. Access Management Setup

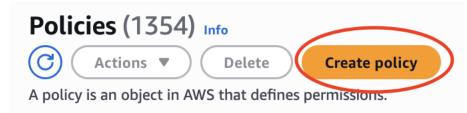
## 1. Create a New IAM Policy

- Open AWS console and navigate to IAM service
- Navigate to "Policies" menu item under the "Access management" on the left menu

#### ▼ Access management



• Click on "Create policy"



• In the "Policy selector", select the "JSON" tab

• Edit statement and paste the following JSON, ensuring you replace the bucket name with the actual name of the S3 bucket you created in Chapter 2

```
"Version": "2012-10-17",
"Statement": [
     {
          "Effect": "Allow",
          "Action": [
               "s3:ListBucket",
               "s3:GetObject",
               "s3:PutObject",
               "s3:PutObjectAcl",
               "s3:DeleteObject"
          ],
          "Resource": [
               "arn:aws:s3:::<a href="mailto:dbucket name">",</a>
               "arn:aws:s3:::<a href="mailto:dbucket name">dbucket name</a>/*"
          ]
     }
]
```

# Specify permissions Info

Add permissions by selecting services, actions, resources, and conditions. Build permission statements using the JSON editor.

```
Policy editor
                                                  JSON
                                       Visual
                                                               Actions T
                                                                                1 ▼ {
                                                       Edit statement
 2
         "Version": "2012-10-17",
 3 ▼
         "Statement": [
 4 ▼
             {
 5
                 "Effect": "Allow",
 6 ▼
                 "Action": [
 7
                     "s3:ListBucket",
                                                               Select a statement
 8
                     "s3:GetObject",
 9
                     "s3:PutObject",
10
                     "s3:PutObjectAcl",
                                                        Select an existing statement in the
11
                     "s3:DeleteObject"
                                                          policy or add a new statement.
12
                 ],
13 ▼
                 "Resource": [
                                                             + Add new statement
14
                     "arn:aws:s3::/<bucket name>
15
                     "arn:aws:s3: <bucket name>
16
17
             }
18
         ]
19 }
```

- Save by clicking the "Next" button
- Name this "distrotv-studio-policy", or another name of your choice, then click
   "Create policy" button

# **Policy details**

#### Policy name

Enter a meaningful name to identify this policy.

distrotv-studio-policy

Maximum 128 characters. Use alphanumeric and

#### 2. Create a New Role

- Open AWS console and navigate to IAM service
- Navigate to "Roles" menu item under the Access management on the left menu

## **▼** Access management

User groups

Users



**Policies** 

**Identity providers** 

Account settings

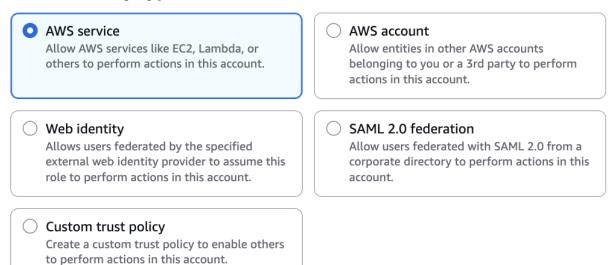
Root access management New

• Click on "Create role" button



- For "Trusted entity type", ensure "AWS service" is selected
- Under "Use case", select the "EC2" radio button option

# **Trusted entity type**



#### Use case

Allow an AWS service like EC2, Lambda, or others to perform actions in this account.

#### Service or use case

EC2

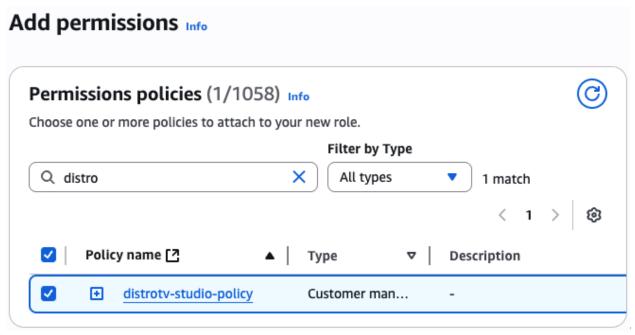
Choose a use case for the specified service.

#### Use case

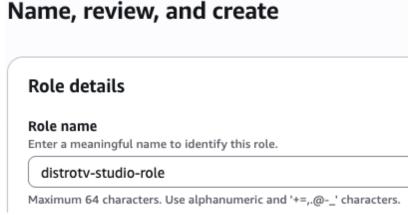


Allows EC2 instances to call AWS services on your behalf.

- Click on "Next" button
- Add permissions: In the "Permissions policies" search box, search for the policy you created in Step 1 (e.g., distrotv-studio-policy or the name you chose). Check the box next to this policy to select it.



- Name, review, and create
  - Under "Role name" box "Name" section, enter 'distrotv-studio-role' or another name of your choice
  - Description can also be left default or changed to your liking.



• Click on "Create role" button

# Chapter 4. Create a Global Conf File

The global conf file is a configuration file which helps point the DistroTV Studio AMI to access the correct public S3 directories for files.

It takes 4 required parameters:

- **s3**\_**meta** is the folder where the channel configuration files are being placed.
- **s3\_output** is the folder where the m3u8s and ts files will be uploaded. they will be uploaded into this folder /strm/ for linear and built channels and in /vid/ for content generated by the DistroTV Studio Transcoder.
- **s3\_transcode** is the folder where the preramp will communicate with the DistroTV Studio Transcoder when new videos are to be encoded.

**channel\_list** are the names of the configuration files the DistroTV Studio AMI will scan for within your S3 directory. In this guide we assume the names of the channel files will be myfirstchannel preramp and myfirstchannel.

#### 1. Create Global Conf File

Download the sample global conf file here and be sure to replace the <a href="https://documents.com/bucket">bucket name</a>
 with your bucket:

https://docs.distro.tv/samples/channel-builder/globals/global 1.conf

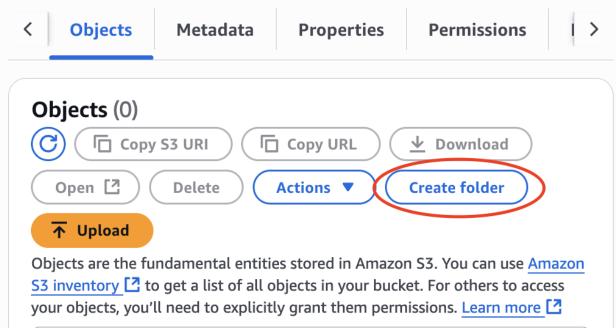
o HINT: After opening the link, right-click the page and 'Save As' global\_1.conf

```
[General]
s3_meta=s3://cbucket name>/meta/
s3_output=s3://cbucket name>/
s3_transcode=s3://channel_list=myfirstchannel_preramp,myfirstchannel
```

- Edit the file and be sure to replace the <br/>
  <br/>
  | Shocket name | With your bucket | Shocket name | With your bucket | Shocket name | S
  - Note: the /meta/ and /transcode/ folders will be created in later steps
- Save the file as "global\_1.conf" on your local machine. You will be uploading this file in a later step.

# 2. Create globals Folder

- Open AWS console and navigate to S3 service and navigate to the bucket you created in Chapter 1 (root folder)
- Click on "Create folder" button



• Under "Folder" box "Folder name" section, name this "globals"

## Folder

#### Folder name

globals

Folder names can't contain "/".

- Create a **globals** folder inside the path defined in the **s3\_output** folder.
  - If you kept the default filepath from the sample global conf file, the file directory path would be s3://<bucket name>/globals/

## 3. Upload Your Global Conf File

• Upload the global conf file you just created to your S3 bucket /globals/ folder.

# Chapter 5. Creating S3 Bucket Directories

- In your S3 bucket, ensure that the folders & directories listed in your global conf file exist
  - s3\_meta=s3://<bucket name>/meta/
  - o s3 output=s3://<bucket name>/
  - s3\_transcode=s3://<bucket name>/transcode/
  - If they do not exist, create them and name them according to how you defined the paths in your global conf file by following the steps below

#### 1 Create **meta** Folder

- Navigate to your S3 bucket root folder
- Click on "Create folder" button
- Under "Folder" box "Folder name" section, name this "meta"
  - If you kept the default filepath from the sample global conf file, the file directory path would be
    - s3://<bucket name>/meta
- Click on "Create folder" button

#### 2. Create transcode Folder

- Navigate to your S3 bucket root folder
- Click on "Create folder" button
- Under "Folder" box "Folder name" section, name this "transcode"
  - If you kept the default filepath from the sample global conf file, the file directory path would be
    - s3://<bucket name>/transcode
- Click on "Create folder" button

### 3. Create content Folder

- Navigate to your S3 bucket root folder
- Click on "Create folder" button
- Under "Folder" box "Folder name" section, name this "content"
  - If you kept the default filepath from the sample global conf file, the file directory path would be
    - s3://<bucket name>/content/
- Click on "Create folder" button

#### 4. Create **channels** Folder

- Navigate to your S3 bucket meta folder
- Click on "Create folder" button

- Under "Folder" box "Folder name" section, name this "channels"
  - If you kept the default filepath from the sample global conf file, the file directory path would be
    - s3://<bucket name>/meta/channels/
- Click on "Create folder" button

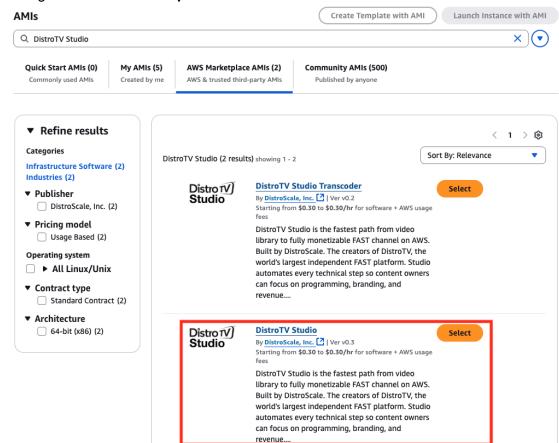
#### 5. Create **schedule** Folder

- Navigate to your S3 bucket **meta** folder
- Click on "Create folder" button
- Under "Folder" box "Folder name" section, name this "schedule"
  - If you kept the default filepath from the sample global conf file, the file directory path would be
    - s3://<br/>s3://<br/>sbucket name>/meta/schedule/
- Click on "Create folder" button

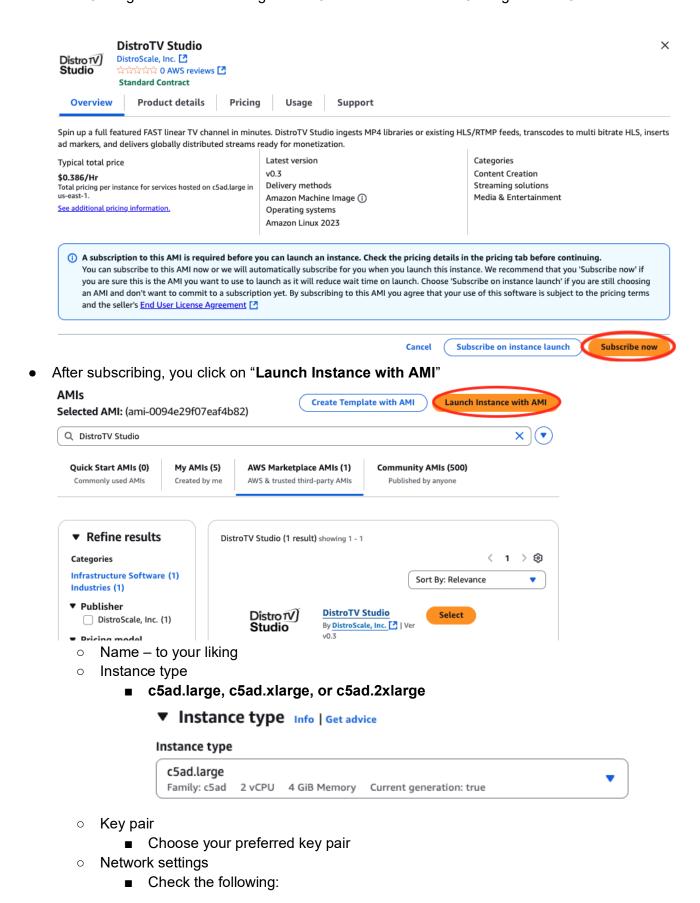
After this chapter, your S3 bucket should have the following structure:

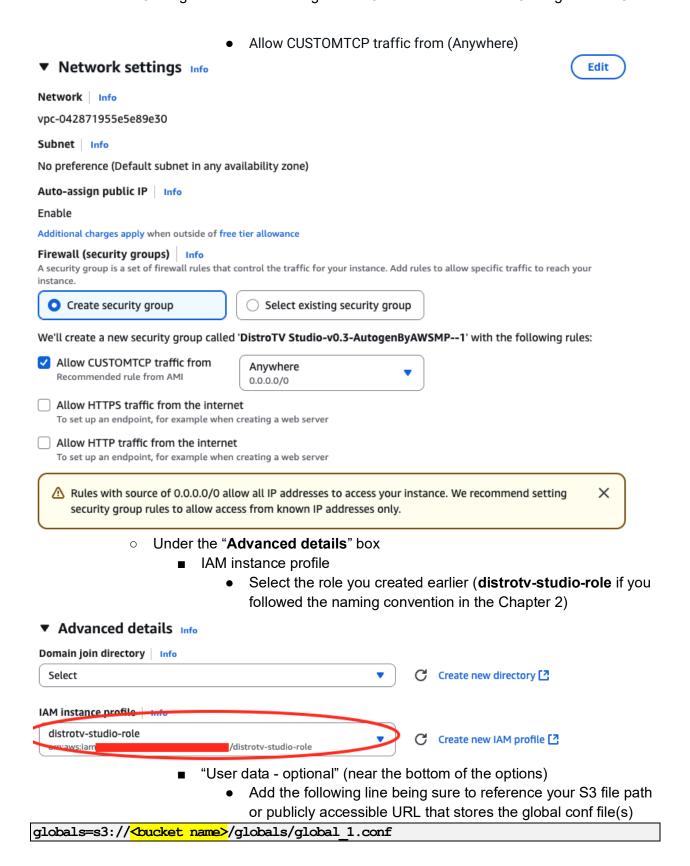
# Chapter 6. Launch a DistroTV Studio Image

- Navigate to AWS EC2 service
- Navigate to "AMI Catalog" menu item under the "Images" section on the left menu
- Navigate to "AWS Marketplace AMIs" and search for "DistroTV Studio"



Select the DistroTV Studio image and click on "Subscribe now"





## User data - optional Info

Upload a file with your user data or enter it in the field.



globals=s3://<bucket name>/globals/global\_1.conf

- Click on "Launch instance" button
- After waiting 2-3 minutes, validate the machine is up and running by connecting to the API
  - Open a browser and go to your EC2 instance's API log, being sure to replace
     <your-instance-public-IPv4> with your newly launched EC2 instance's Public
     IPv4 address: http://<your-instance-public-IPv4>:34123/?version

# Chapter 7. Ingest Content

#### 1. Create a Metadata File

- Dowload the sample TSV here: https://docs.distro.tv/samples/channel-builder/content/test\_category\_metadata.tsv
- Or if you wish to do your first channel build with your own content, then you can create a sample content metadata file for ingest by following the Excel template found below. Populate the spreadsheet with your own content details and save as a TSV file with the name test\_category\_metadata.tsv. You can find additional details in our User Guide.

https://docs.distro.tv/samples/channel-builder/content/DistroTV%20-%20Channel%20Content%20Sample%20Metadata%20Template.xlsx

- Upload **test\_category\_metadata.tsv** to a publicly accessible location, we recommend the S3 bucket you just created for this purpose in the content folder.
  - If you kept the default filepath from the sample global conf file, the file path would be s3://<br/>
    /content/test\_category\_metadata.tsv

# 2. Create a Preramp Conf File

- Create a channel\_preramp conf file by downloading the sample preramp conf file
  here being sure to edit and replace <a href="https://channel-preramp.conf">https://channel-preramp.conf</a>
   Create a channel\_preramp conf file by downloading the sample preramp conf file
  here being sure to edit and replace <a href="https://channel-preramp.conf">https://channel-preramp.conf</a>
   Create a channel\_preramp conf file by downloading the sample preramp conf file
  here being sure to edit and replace <a href="https://channel-preramp.conf">https://channel-preramp.conf</a>
- Save as myfirstchannel preramp.conf.
  - HINT: Preramp files must have the **\_preramp.conf** suffix in the file name.
- Upload this file to your /channels/ folder inside the path defined in the s3\_meta folder.
  - If you kept the default filepath from the sample global conf file, the file directory path would be
    - s3://<bucket name>/meta/channels/
- After uploading, you can wait 2-3 minutes to see if the channel\_preramp conf file was picked up by the machine by checking the watchdog API at:

http://http://

IPv4>:34123/?cmd=getlog&channel=watchdog&grep=

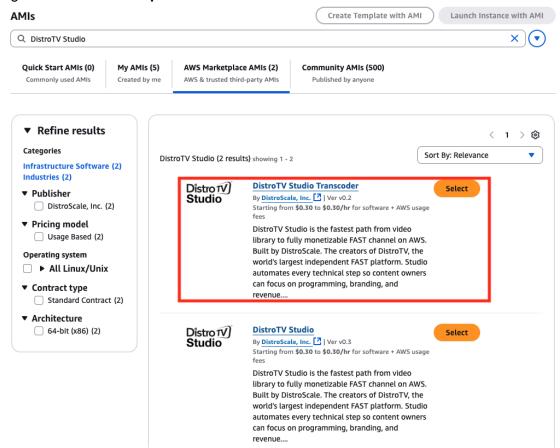
It should say something similar to the following

```
myfirstchannel_preramp: no conf file found on current configuration, added...
myfirstchannel_preramp (re)started...
cronjob started for myfirstchannel preramp
```

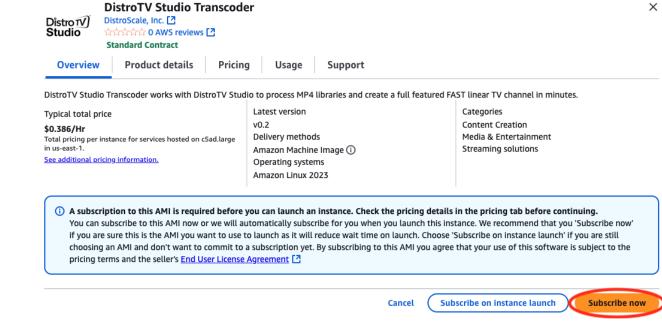
myfirstchannel preramp: 2 items sent to render farm...

# Chapter 8. Launch a DistroTV Studio Transcoder Image

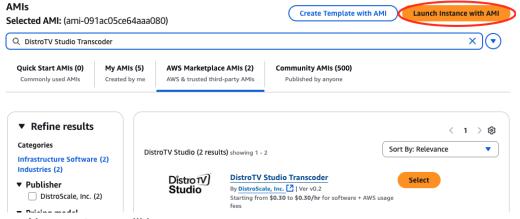
- Navigate to AWS EC2 service
- Navigate to "AMI Catalog" menu item under the "Images" section on the left menu
- Navigate to "AWS Marketplace AMIs" and search for "DistroTV Studio Transcoder"



Select the DistroTV Studio Transcoder image and click on "Subscribe now"



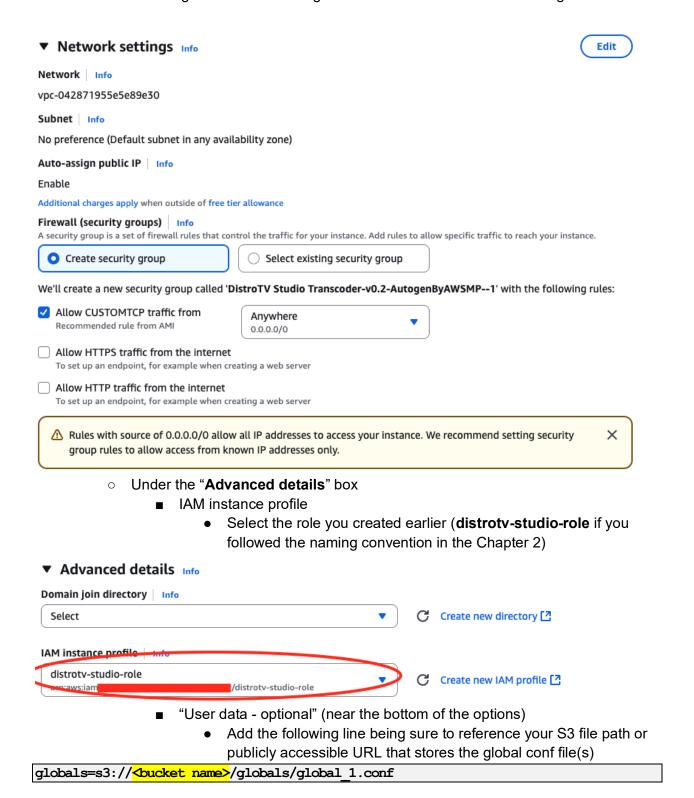
After subscribing, you click on "Launch Instance with AMI"



- Name to your liking
- Instance type
  - c5ad.large, c5ad.xlarge, or c5ad.2xlarge
    - ▼ Instance type Info | Get advice



- Key pair
  - Choose your preferred key pair
- Network settings
  - Check the following:
    - Allow CUSTOMTCP traffic from (Anywhere)



User data - optional Info

Upload a file with your user data or enter it in the field.



globals=s3://<bucket name>/globals/global\_1.conf

- Click on "Launch instance" button
- Once the DistroTV Studio Transcoder AMI is launched, after 2-3 minutes, it will pick up the videos found in your /transcode/new/ folder
- You can view the status of the database by accessing the API at http://<IPv4\_ADDRESS\_OF\_YOUR\_DISTROTV\_STUDIO\_MACHINE>:34123/?cmd=d blist
  - HINT: <IPv4\_ADDRESS\_OF\_YOUR\_DISTROTV\_STUDIO\_MACHINE> should be your <u>DistroTV Studio image</u> IP address

# Chapter 9. Create Channel Schedule

## 1. Download a Schedule File

- IMPORTANT: Please note the current time in UTC https://www.utctime.net/
- Create your schedule file by downloading one of the samples below according to the current time in UTC
  - If it is currently between hour 0 and 11:59:59 UTC then download test\_schedule\_before12.tsv
  - If it is currently between hour 12:00:00 and 23:59:59 UTC then download test schedule after12.tsv

<b>UTC Time</b>	00:00:00 - 11:59:59 UTC	12:00:00 - 23:59:59 UTC
Filename	test_schedule_before12.tsv	test_schedule_after12.tsv
Download Link	https://docs.distro.tv/samples/channel- builder/meta/schedule/myfirstchannel/tes t_schedule_before12.tsv	https://docs.distro.tv/samples/channel- builder/meta/schedule/myfirstchannel/te st_schedule_after12.tsv

• The file you downloaded does not need to be modified

# 2. Create myfirstchannel Folder

- Navigate to your S3 bucket /meta/schedule folder
- Click on "Create folder" button
- Under "Folder" box "Folder name" section, name this "myfirstchannel"
  - If you kept the default filepath from the sample global conf file, the file directory path would be
    - s3://<br/>s3://<br/>s3://<br/>/meta/schedule/myfirstchannel
- Click on "Create folder" button

## 3. Upload Your Schedule

- Navigate to the myfirstchannel folder you just created under s3://<bucket name>/meta/schedule/myfirstchannel/
- The file you downloaded does not need to be modified
- Upload the schedule TSV file to this folder

# Chapter 10. Launch Your Channel

- Create a channel conf file by downloading the sample channel conf file below here: https://docs.distro.tv/samples/channel-builder/meta/channels/myfirstchannel.conf
- Save as myfirstchannel.conf
- This channel conf file controls different channel parameters such as ad marker cadence, stream quality variants, ad filler videos, and more. You can find additional details in our User Guide.
- Check to ensure the sample videos have finished transcoding before proceeding with the next step
  - You can view the status of the database by accessing the API at http://<your-instance-public-IPv4>:34123/?cmd=dblist
    - HINT: <your-instance-public-IPv4> should be your DistroTV Studio image IP address
  - Wait for the "status" of both the videos to be "complete" before proceeding with the next step
- Inside the /meta/channels/ folder, upload the channel conf file you created myfirstchannel.conf
- After uploading, you can wait a few minutes to see if the channel was picked up by the machine by checking the watchdog API at:
  - http://<your-instance-public-IPv4>:34123/?cmd=getlog&channel=watchdog&grep=
- The initial channel EPG building from the provided schedule will begin progressing. You can see this occur within the channel API at:
  - http://<vour-instance-public-IPv4>:34123/?cmd=getlog&channel=myfirstchannel&grep=
- If the schedule was properly picked up, it will say the below (or something similar)

```
cronjob started
processing (pgen) <name-of-schedule>.tsv
generating <name-of-schedule>.tsv
coding <name-of-schedule>.tsv
pcode: completed: /data/onramp/runtime/myfirstchannel/schedule/<name-of-
schedule>.done
found tsv files: ['<name-of-schedule>.tsv']
cronjob finished in n minutes
processing /data/onramp/runtime/myfirstchannel/schedule/<name-of-schedule>.done-
start time: YYYY-MM-DD HH:MM:SS
master playlist building complete... (timestamp of when the schedule finished being
built)
cronjob finished in 0.17 minutes
watchdog.py process not found, restarting...
v1.m3u8 doesnt exist, restarting...
cencoder init...
playlist changed: /data/onramp/runtime/myfirstchannel/schedule/<name-of-
schedule>.done- start: YYYY-MM-DD HH:MM:SS / endt: YYYY-MM-DD HH:MM:SS
watchdog.py process not found, restarting...
```

- The master playlist building complete message marks the successful generation of the schedule and the EPG has been built.
- Once the EPG has been built, you can check the EPG in the s3\_meta folder. If you kept the default filepath from the sample global conf file, the file directory path would be
  - s3://<bucket name>/meta/epg/myfirstchannel/<datetimestamp>/
- You can also check to see if files have begun to populate in your s3\_output folder. If you kept the default filepath from the sample global conf file, the file directory path would be s3://<br/>strm/channels/myfirstchannel/
- When the built schedule is active, you will be able to view your channel at https://<br/>
  https://
  - name>.s3.<region>.amazonaws.com/strm/channels/myfirstchannel/master.m3u8
    - Replace <bucket name> with your bucket name
    - Replace <region> with your S3 bucket region
- Congratulations on launching your first channel!

#### After all chapters, your S3 bucket should have the following structure:

```
<bucket-name>/
   - content/
                                                   (Created as per Chapter 5)
     test_category_metadata.tsv (Uploaded as per Chapter 7)
                                                (Created as per Chapter 4)
  - globals/
    global_1.conf
                                                   (Uploaded as per Chapter 4, referenced by EC2 instances)
          channels/ (Created as per Chapter 5)

property (Created as per Chapter 5)

property (Uploaded as per Chapter 10)
  - meta/
     - channels/
           myfirstchannel_preramp.conf (Uploaded as per Chapter 7)
          epg/ (System generated, implied by Chapter 10)

ightharpoonup myfirstchannel/ (System generated, implied by Chapter 10)

ightharpoonup (System generated, contains EPG files)
          schedule/ (Created as per Chapter 5)
    myfirstchannel/ (Created as per Chapter 9)
       - schedule/
                test schedule xxxx.tsv (Uploaded, name depends on UTC time, as per Chapter 9)
    strm/
                                                    (System generated, implied by Chapter 10)
          channels/ (System generated, implied by Chapter 10)

channels/ (System generated, implied by Chapter 10)

myfirstchannel/ (System generated, implied by Chapter 10)

master.m3u8 (System generated, implied by Chapter 10)

(System generated, playback URL target in Chapter 10)

v.ts (Video segment files, system generated)
     L channels/
   - transcode/
                                                   (Created as per Chapter 5)
                                                    (System generated, implied by Chapter 8)
     └─ new/
          lacksquare (Video files to be processed by DistroTV Studio Transcoder would appear here)
   - vid/
                                                   (System generated, implied by Chapter 8)
     └── (Transcoded video output from DistroTV Studio Transcoder would appear here)
```