

# 利用AWS S3 + Lambda运行ffmpeg获取视频首关键帧

## 方案说明

提取视频首关键帧，保存成图片。

利用AWS S3 + Lambda处理方式。上传视频到S3指定的存储桶时，将触发S3事件，触发事件将传递事件给Lambda，由Lambda完成视频处理。

视频处理可以利用ffmpeg开源软件，ffmpeg目前在AWS SAM上已经提供对应的Lambda layer（类似依赖包）。使用时只要把对应的layer引入到Lambda函数中。

## 前提条件

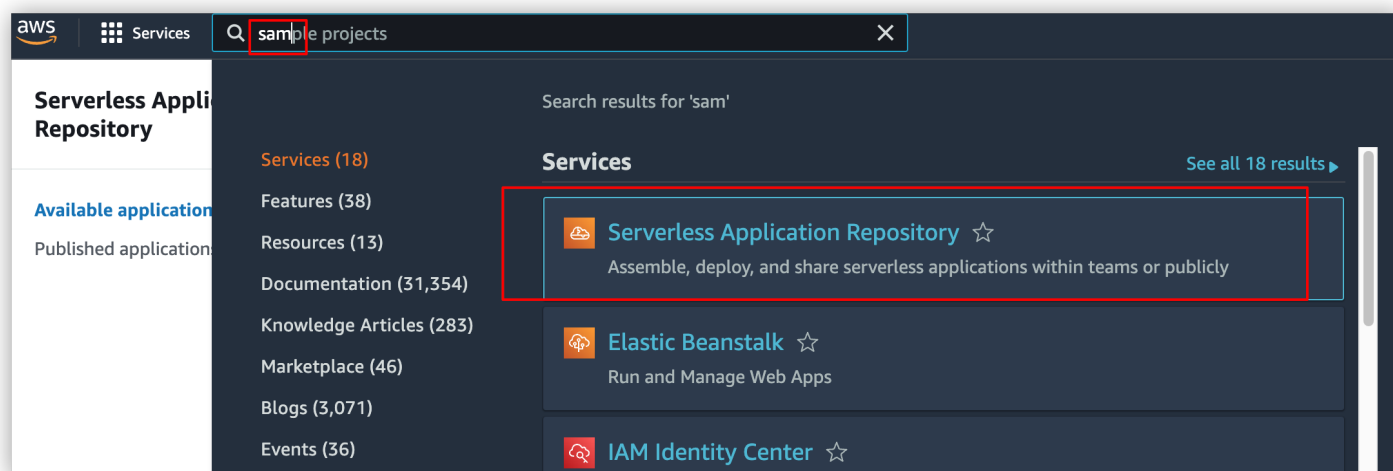
提供两个同区域的存储桶，分别是目标和来源。

来源桶要求：vod-source-ap-southeast-1-xxx。来源桶下建议创建子目录，用于上传来源视频文件：

目标桶要求：vod-destination-ap-southeast-1-xxx。目标桶创建子目录，用于保存图片。

## 方案部署

1.从SAM部署ffmpeg到 lambda layer



Serverless Application Repository

Available applications

Published applications

Serverless Application Repository > Available applications

Available applications

Public applicationsPrivate applications

290 applications that create custom IAM roles or resource based policies are hidden. InfoShow applications

Public applications (353)

ffmpeg-lambda-layer

Best Match

Show apps that create custom IAM roles or resource policies (353 additional)

ffmpeg-lambda-layer-python3

A lambda layer to make using ffmpeg in python lambdas a delight

lambdaffmpeg

Adam Best

376 deployments

fc-audio-mix-service

A serverless microservice that mixes/merges multiple audio files into a single file with different volumes for each audio file.

layerlambda serverless ffmpeg aws

Team First Coders

0 deployments

ffmpeg-lambda-layer

Static build of FFmpeg/FFprobe for Amazon Linux 2, packaged as a Lambda layer. Bundles FFmpeg 4.1.3

lambdaffprobe ffmpeg layer

Gojko AdzicAWS verified author

10.2K deployments

ffmpeg-lambda-layer — version 1.0.0

Copy as SAM Resource

Review, configure and deploy

Application details

Author

Gojko AdzicAWS verified author

Source code URL

<https://github.com/serverlesspub/ffmpeg-aws-lambda-layer>

Description

Static build of FFmpeg/FFprobe for Amazon Linux 2, packaged as a Lambda layer. Bundles FFmpeg 4.1.3

Report a vulnerability

If you believe this application poses a security risk, please [file a vulnerability report](#).

Template

Permissions

License

Readme file

View on the [AWS Serverless Application Repository site](#).

Application settings

Application name

The stack name of this application created via AWS CloudFormation

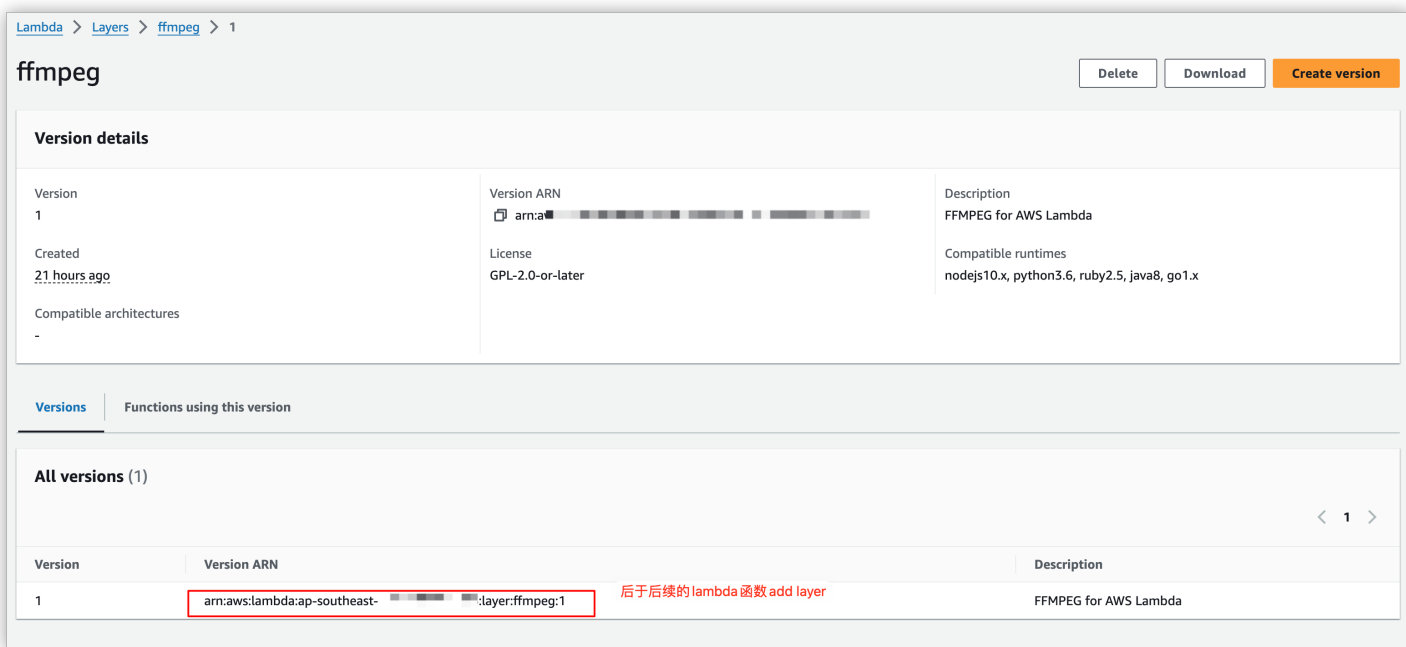
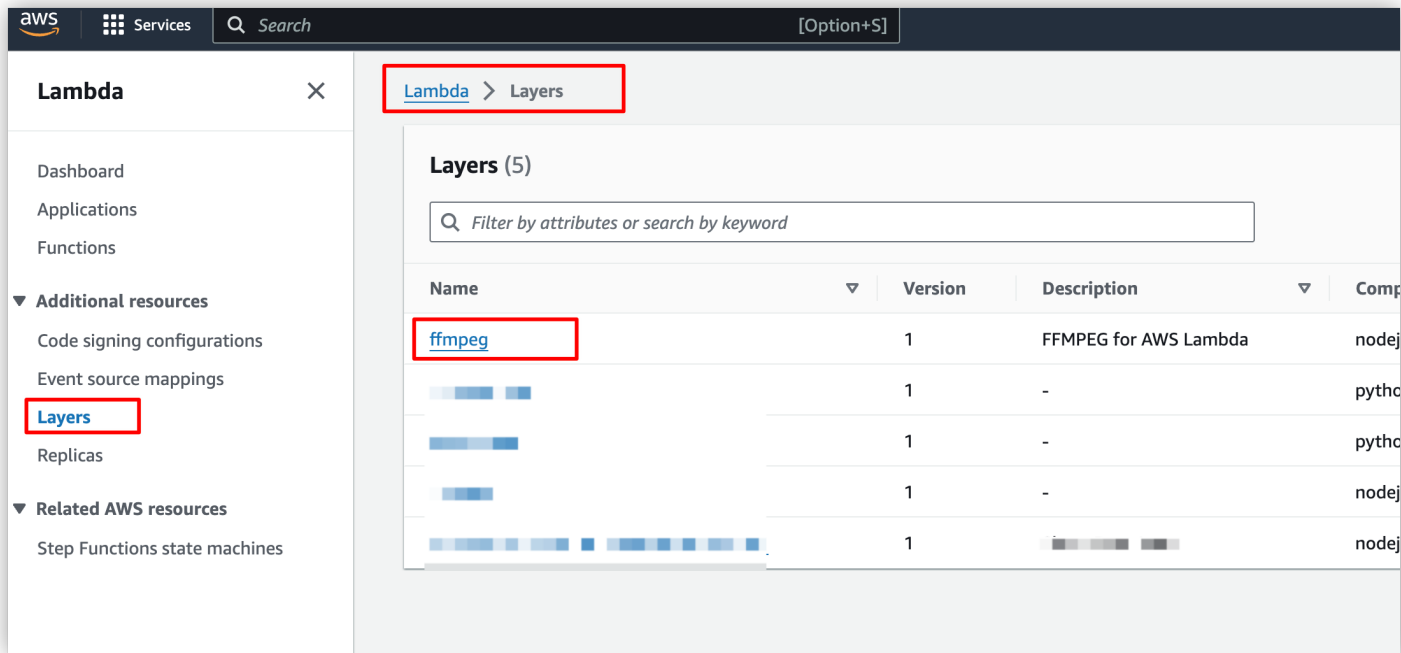
ffmpeg-lambda-layer

Cancel

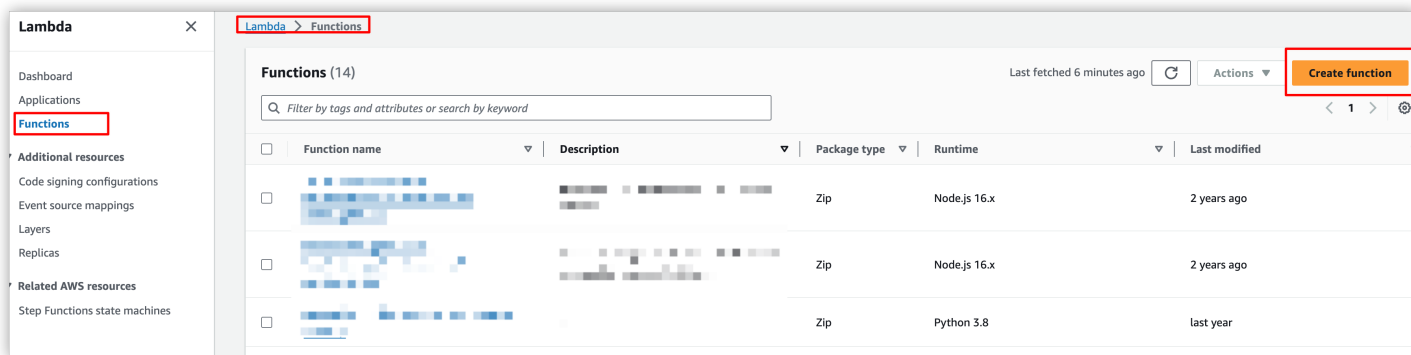
Previous

Deploy

## 2.查看已部署的layer



### 3.创建lambda函数



### 4.为lambda添加一个触发器，例如：S3是事件源

## video-process

▼

Function overview

Info

## Diagram

## Template



video-process



## Layers

(1)

**+ Add trigger**

**+ Add destination**

## Add trigger

### Trigger configuration [Info](#)



S3

aws asynchronous storage

## Bucket

Choose or enter the ARN of an S3 bucket that serves as the event source. The bucket must be in the same region as the function.

🔍 s3/vod-destination-ap-southea

Bucket region: ap-southeast-1

### Event types

Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.

All object create events ✕

Prefix - *optional*

Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters.

## video-input

Suffix - *optional*

Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters.

.mp4

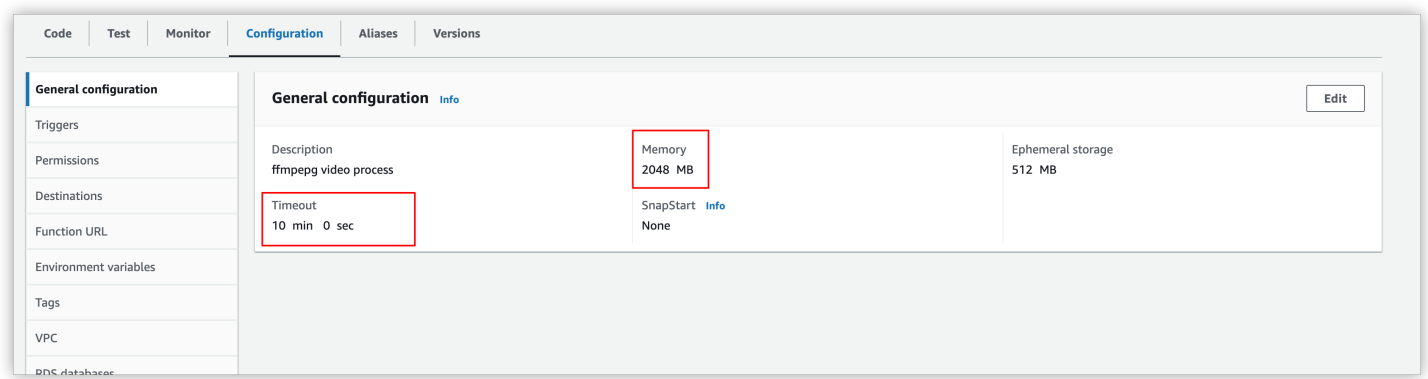
### Recursive invocation

If your function writes objects to an S3 bucket, ensure that you are using different S3 buckets for input and output. Writing to the same bucket increases the risk of creating a recursive invocation, which can result in increased Lambda usage and increased costs. [Learn more](#) 

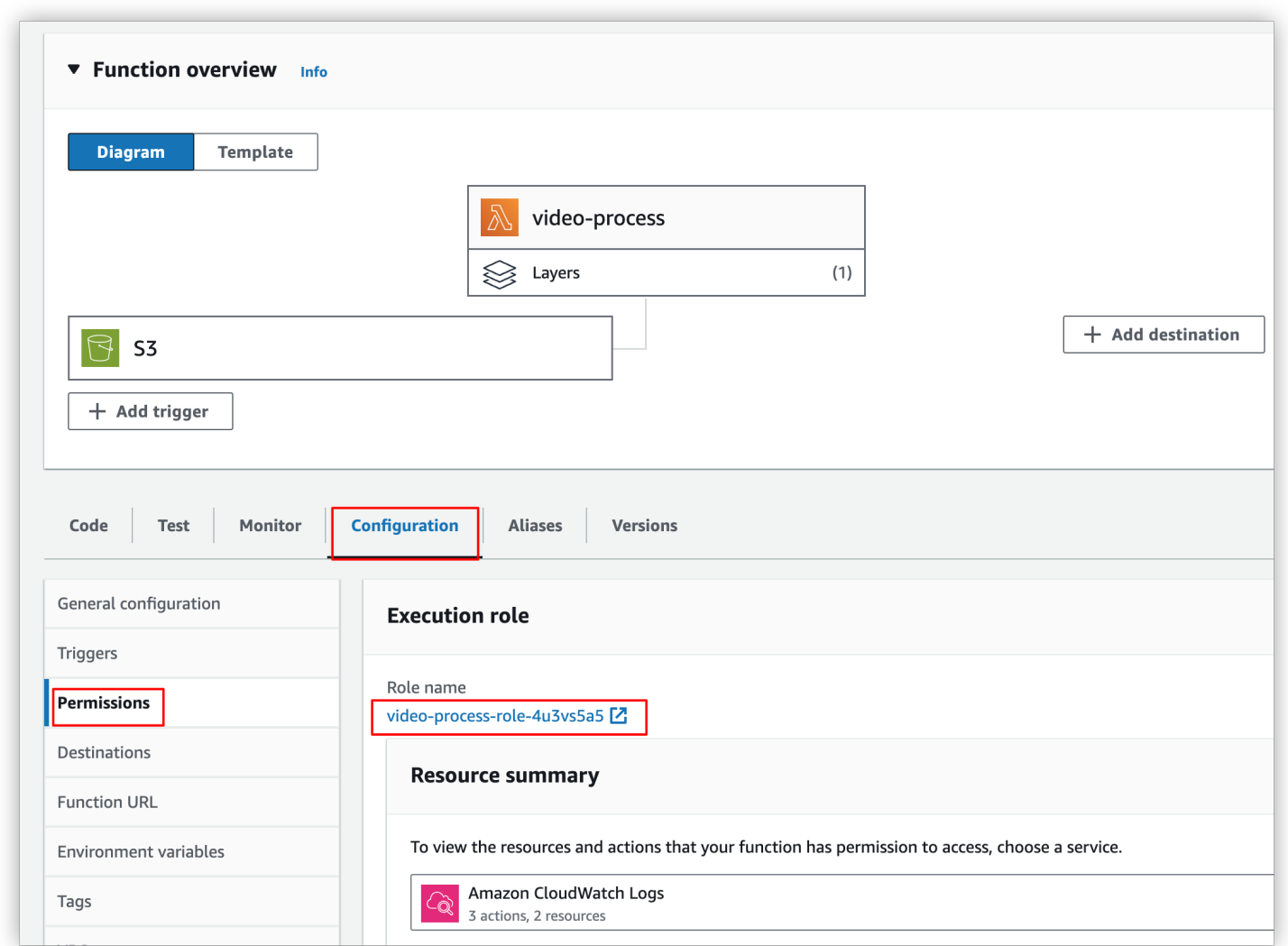
☒ I acknowledge that using the same S3 bucket for both input and output is not recommended and that this configuration can cause recursive invocations, increased Lambda usage, and increased costs.

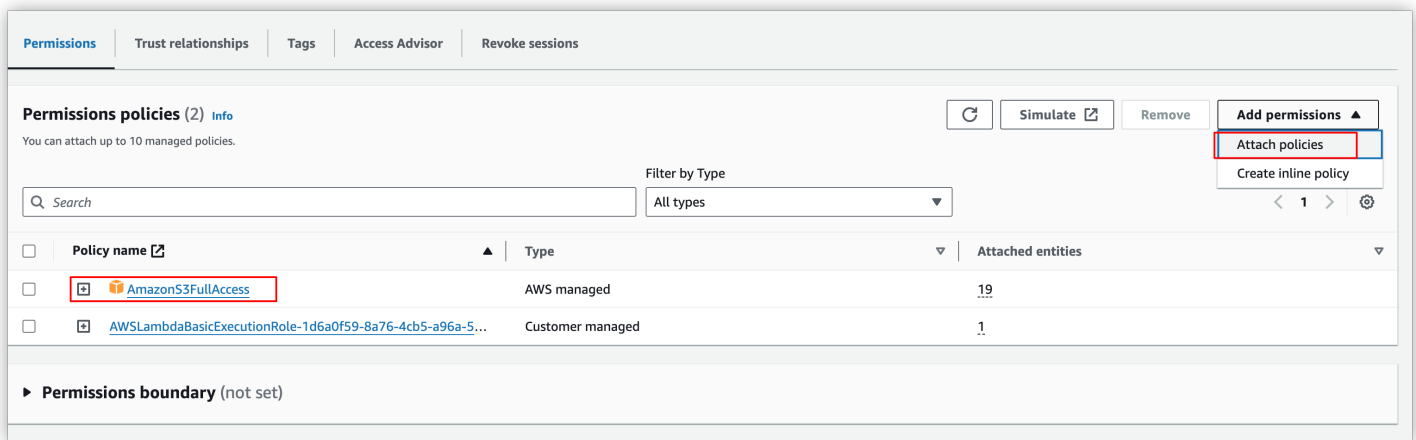
Lambda will add the necessary permissions for AWS S3 to invoke your Lambda function from this trigger. [Learn](#)

5.配置lambda基础配置，执行超时时间10分钟，可用内存2028M（视频可能较大）

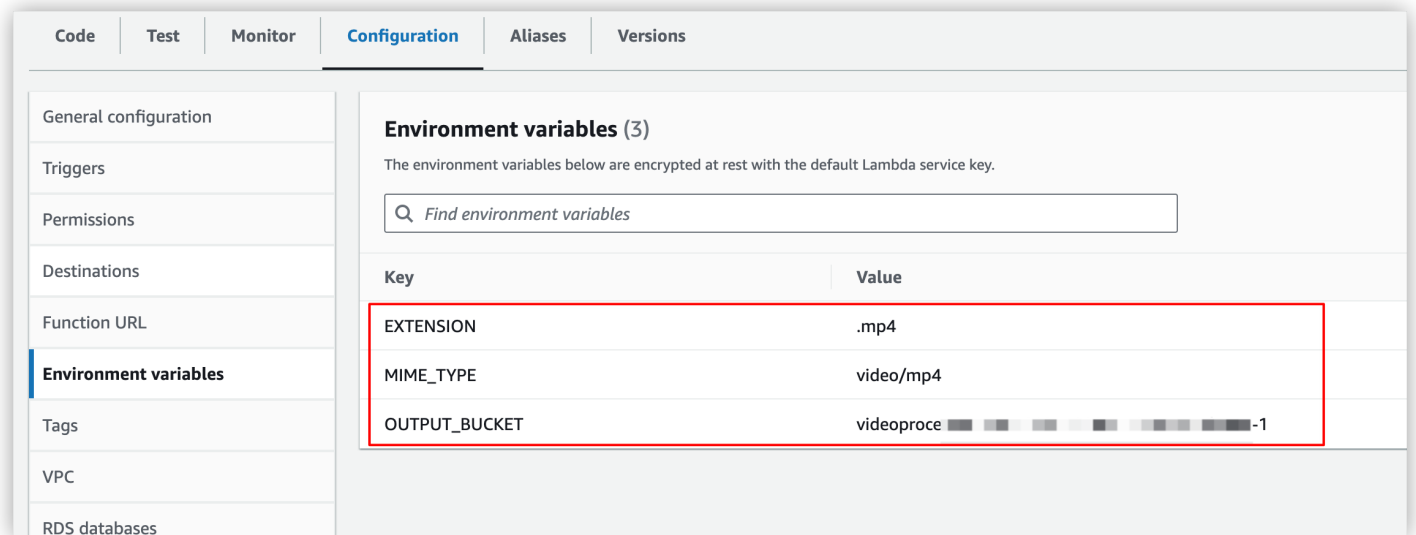


6.配置权限，新建lambda函数会自动生成一个角色，权限设置是对这个角色，这里配置是增加S3存储桶。（按照最小权限原则，在iam里可以设置到具体的桶和目录）

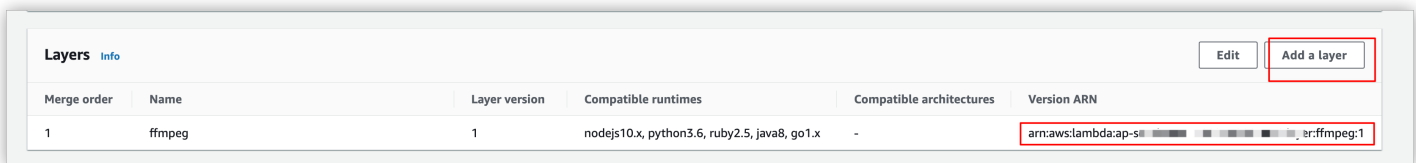




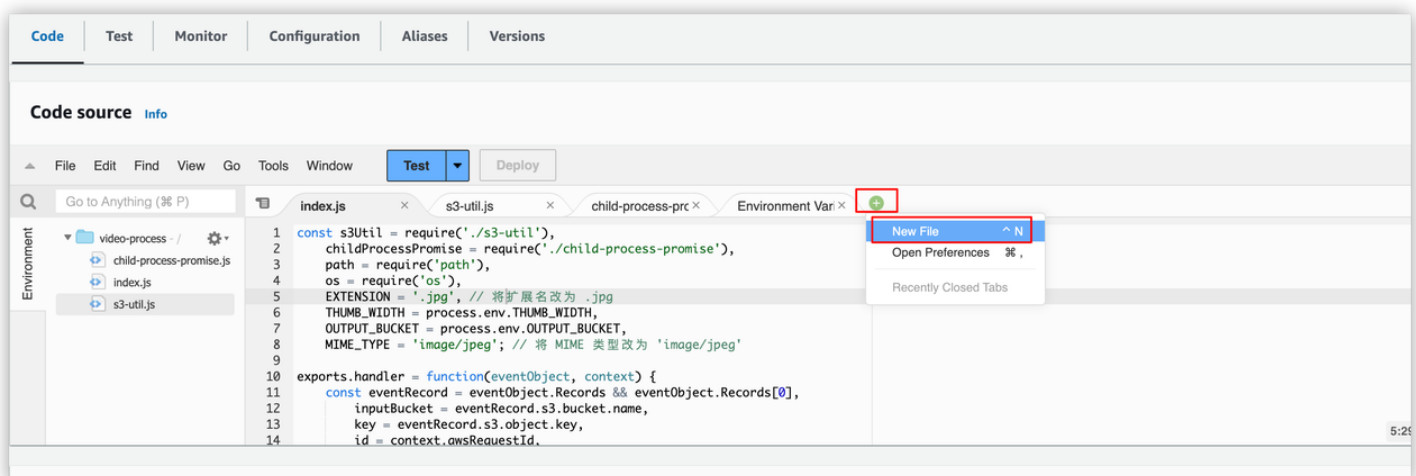
7.设置lambda变量环境，这里设置了三个参数：文件扩展名、S3的元数据、输出的目标存储桶。



8.添加层到这个函数（ARN来自第2步）



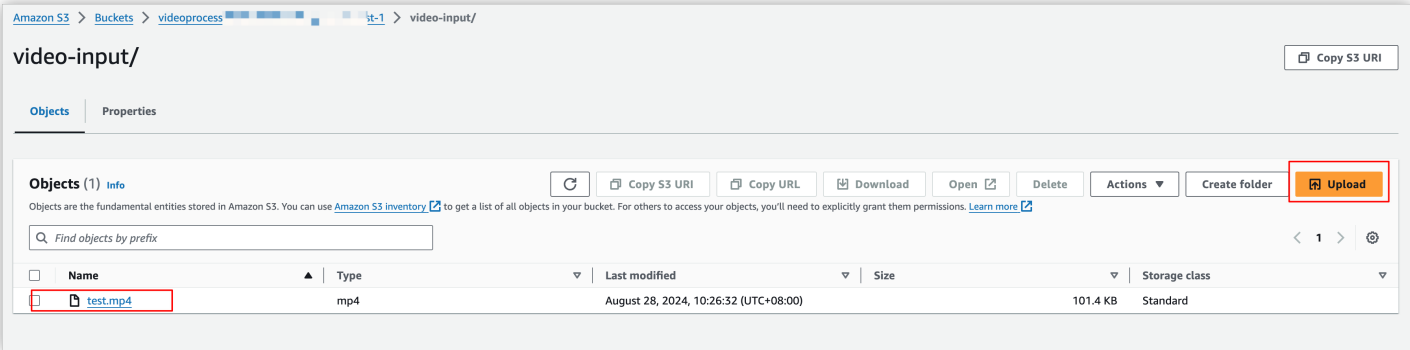
9.添加代码



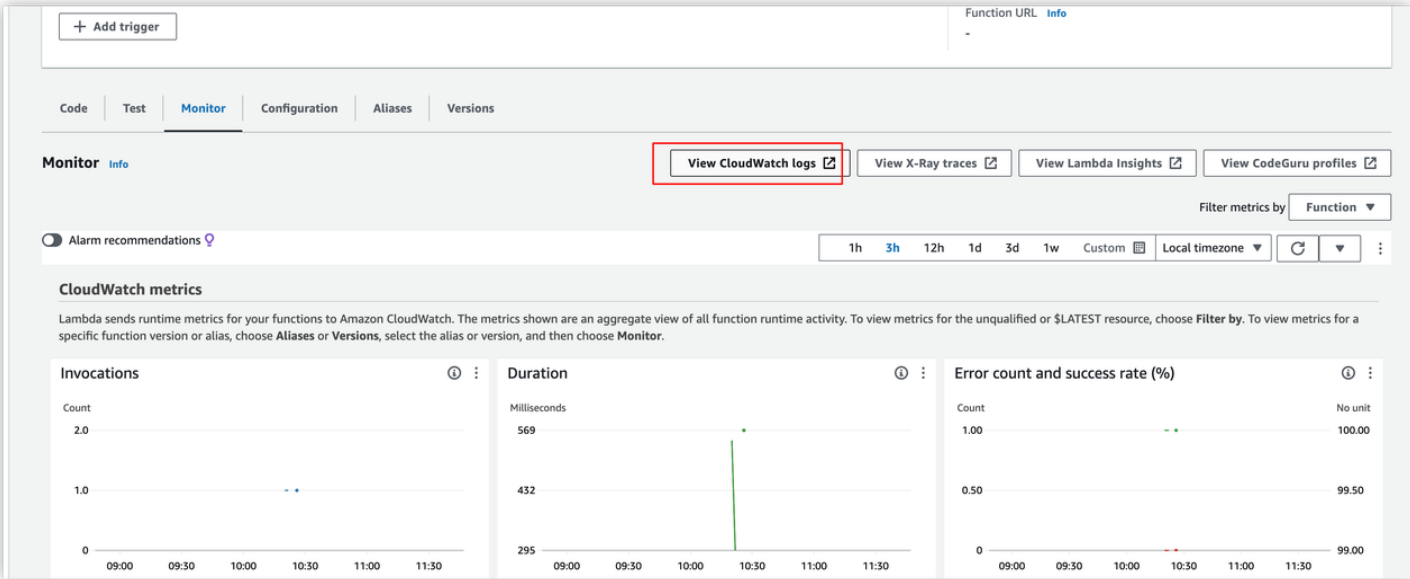
把代码贴到具体的脚本里。

# 验证

## 1.上传视频



## 2.查看监控



## 3.查看日志

Log streams Tags Anomaly detection Metric filters Subscription filters Contributor Insights Data protection

Log streams (3) Refresh Delete Create log stream Search all log streams

Filter log streams or try prefix search ☐ Exact match ☐ Show expired Info

Log stream	Last event time
2024/08/28/[\$LATEST]1fba3216223341309c0b2d866fa6ff23	2024-08-28 10:26:33 (UTC+08:00)
2024/08/28/[\$LATEST]5d49c90cc2ce4193a9d9ae3c70b15bac	2024-08-28 10:22:44 (UTC+08:00)
2024/08/27/[\$LATEST]e43f958065c44532bc51adc24636ff8b	2024-08-27 23:53:57 (UTC+08:00)

handler\_name : VideoHandler  
encoder : Lavc58.35.100 mjpeg  
Side data:  
cpb: bitrate max/min/avg: 0/0/200000 buffer size: 0 vbv\_delay: -1

2024-08-28T02:26:33.497Z

e1ab9152-e025-420d-9f26-5840203fe659

ERROR

[Parsed\_thumbnail\_0 @ 0x5b8ca80] frame id #22 (pts\_time=4.400000) selected from a set of 40 images

2024-08-28T02:26:33.515Z

e1ab9152-e025-420d-9f26-5840203fe659

ERROR

frame= 1 fps=0.0 q=6.0 Lsize=N/A time=00:00:04.60 bitrate=N/A speed= 23x  
video:67kB audio:0kB subtitle:0kB other streams:0kB global headers:0kB muxing overhead: unknown

2024-08-28T02:26:33.527Z

e1ab9152-e025-420d-9f26-5840203fe659

INFO

/opt/bin/ffmpeg completed with 0:null

2024-08-28T02:26:33.527Z

e1ab9152-e025-420d-9f26-5840203fe659

INFO

uploading videoprocess-output-669759083456-ap-southeast-1 video-input/test-thumb.jpg /tmp/e1ab9152-e025-420d-9f26-5840203fe659-output.jpg

END RequestId: e1ab9152-e025-420d-9f26-5840203fe659

REPORT RequestId: e1ab9152-e025-420d-9f26-5840203fe659

Duration: 568.52 ms

Billed Duration: 569 ms

Memory Size: 2048 MB

Max Memory Used: 154 MB

Init Duration: 446.94 ms

No newer events at this moment. Auto retry paused. [Resume](#)

Back to top ^

4.查看输出

Amazon S3 > Buckets > videoprocess-o

video-input/

Copy S3 URI

Objects | Properties

Objects (1) Info

Copy S3 URI Copy URL Download Open Delete Actions Create folder Upload

Find objects by prefix

Name	Type	Last modified	Size	Storage class
test-thumb.jpg	jpg	August 28, 2024, 10:26:34 (UTC+08:00)	67.3 KB	Standard

结论

符合预期，提取了视频的首要关键帧。

交付的内容是文档、三个脚本

参考

[https://blog.csdn.net/ht\\_csdn\\_net/article/details/125839802](https://blog.csdn.net/ht_csdn_net/article/details/125839802)