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COS20019 – Cloud Computing Architecture - Wk3: ACA Module 11 Guided Lab - Streaming Dynamic Content using Amazon CloudFront

Task 1 – Lab preparation (steps 5-6)

The screenshot shows the AWS Management Console interface for an Amazon S3 bucket. The breadcrumb navigation at the top indicates the path: **Amazon S3** > **Buckets** > **c84296a179549314177663t1w1682-awstrainingreinvent-1hj60dvheaf6c** > **input/**. A red arrow points to the bucket name with the label "step 5 - the S3 bucket".

On the left sidebar, the "Amazon S3" section is expanded, showing options like Buckets, Access Points, Object Lambda Access Points, Multi-Region Access Points, Batch Operations, IAM Access Analyzer for S3, Storage Lens, and AWS Marketplace for S3.

The main content area shows the "input/" folder. Below the folder name, there are tabs for "Objects" and "Properties". The "Objects" tab is active, displaying a list of objects. A red arrow points to the object name "AmazonS3Sample.mp4" with the label "step 6 - the input video file is in the S3 bucket".

The object list table has the following columns: Name, Type, Last modified, Size, and Storage class. The table contains one row:

	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	AmazonS3Sample.mp4	mp4	May 27, 2023, 13:04:10 (UTC+07:00)	22.4 MB	Standard

At the top right of the console, the user's profile is visible: "voclabs/user2564760=104222196@student.swin.edu.au @ 1682-2355...".

Task 2: Create an Amazon CloudFront Distribution (steps 7-11)

aws Services Search [Alt+S]

CloudFront > Distributions > Create

Create distribution

Origin

Origin domain
Choose an AWS origin, or enter your origin's domain name.

Origin path - optional [Info](#)
Enter a URL path to append to the origin domain name for origin requests.

Name
Enter a name for this origin.

Origin access [Info](#)

☒ Public
Bucket must allow public access.

☐ Origin access control settings (recommended)
Bucket can restrict access to only CloudFront.

☐ Legacy access identities
Use a CloudFront origin access identity (OAI) to access the S3 bucket.

Add custom header - optional
CloudFront includes this header in all requests that it sends to your origin.

Enable Origin Shield [Info](#)
Origin Shield is an additional caching layer that can help reduce the load on your origin and help protect its availability.

☒ No

☐ Yes

steps 7-11: create a CloudFront distribution

the origin domain name is correctly set to the S3 bucket

disable restrict bucket access

CloudShell Feedback Language

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Task 3: Create an Amazon Elastic Transcoder Pipeline (steps 12-31)

aws

Services

Search

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Create New Pipeline

steps 12-20: create an Elastic Transcoder Pipeline

A pipeline is a queue for your transcoding jobs. You can have more than one pipeline per AWS account. You can use multiple pipelines to organize your transcoding workflow, for example, by having one pipeline for standard-priority jobs and one for high-priority jobs.

Pipeline Name

InputPipeline

← Name the pipeline InputPipeline

Input Bucket

c84296a1795493l4177663t1w1682-i

← Select the S3 bucket for Input Bucket

IAM Role

AmazonElasticTranscoderRole

← Set the IAM role to AmazonElasticTranscoderRole

This role must have the permissions necessary to access the applicable S3 buckets and SNS topics. [View the policy for the default IAM role.](#)

Configuration for Amazon S3 Bucket for Transcoded Files and Playlists

Bucket

c84296a1795493l4177663t1w1682-i

← Select the S3 bucket

Storage Class

Standard

← Set the Storage Class to Standard

[+ Add Permission](#)

Configuration for Amazon S3 Bucket for Thumbnails

Bucket

c84296a1795493l4177663t1w1682-i

← Select the S3 bucket

Storage Class

Reduced Redundancy

← Set the Storage Class to Reduced Redundancy

[+ Add Permission](#)

▸ Notifications (Optional)

▸ Encryption (Optional)

Cancel

Create Pipeline

Create the pipeline

Create a New Transcoding Job

steps 21-24: create a new job for the InputPipeline

A job contains all of the information that Elastic Transcoder needs to transcode one media file into another format. When you create a job, it's automatically added to the pipeline that you specify.

Pipeline InputPipeline

← select the target pipeline

Output Key Prefix output/

← set the output prefix to /output

Input Details (1 of 1)

Input Key input/AmazonS3Sample.mp4

← select the mp4 input file in the S3 bucket

Decryption Parameters ☒ None ☐ Enter Information

Available Settings ☐ Clip ☐ Input Captions

+ Add Another Input

Output Details (1 of 3)

steps 25-28: configure output details

Preset System preset: HLS 2M

← select preset HLS 2M

Segment Duration 10

← set the segment duration to 10

Output Key HLS20M

← set the output key prefix to HLS20M

→ for the 2Mbps bit rate

Segment Filename Preview HLS20M00000.ts

Create Thumbnails ☒ No ☐ Yes

Output Rotation (Clockwise) auto

Encryption Parameters To protect your HLS Outputs, add an HLSv3 or HLSv4 playlist along with Content Protection information.

Available Settings ☐ Output Captions

Output Details (2 of 3)

- Remove Output

Preset System preset: HLS 1.5M ⓘ

Segment Duration 10 ⓘ

Output Key HLS15M ⓘ

Segment Filename Preview HLS15M00000.ts ⓘ

Create Thumbnails ☒ No ☐ Yes ⓘ

Output Rotation (Clockwise) auto ⓘ

Encryption Parameters To protect your HLS Outputs, add an HLSv3 or HLSv4 playlist along with Content Protection information.

Available Settings ☐ Output Captions ⓘ

→ repeat steps 25-28 for bit rate 1.5Mbps

Watermarks

Preset Watermark Id Select One...

Output Details (3 of 3)

- Remove Output

Preset System preset: HLS 1M ⓘ

Segment Duration 10 ⓘ

Output Key HLS10M ⓘ

Segment Filename Preview HLS10M00000.ts ⓘ

→ repeat steps 25-28 for bit rate 1Mbps

Create Thumbnails ☒ No ☐ Yes ⓘ

Output Rotation (Clockwise) auto ⓘ

Encryption Parameters
To protect your HLS Outputs, add an HLSv3 or HLSv4 playlist along with Content Protection information.

Available Settings ☐ Output Captions ⓘ

Watermarks

Preset Watermark Id Select One...

[+ Add Another Output](#)

steps 29-31: configure a playlist and confirm job creation

Playlist (1 of 1)

[- Remove Playlist](#)

Master Playlist Name primary ⓘ

Playlist Format HLSv3 ⓘ

Outputs in Master Playlist HLS20M ⓘ

Outputs in Master Playlist HLS15M ⓘ

Outputs in Master Playlist HLS10M ⓘ

Content Protection ☒ None ☐ HLS AES ☐ PlayReady DRM ⓘ

[+ Add Playlist](#)

← Name the playlist "primary"

← Select the format HLSv3

} ← Include all three outputs in the playlist

Create the new job

▶ User Metadata (Optional)

[Cancel](#) [Create New Job](#)

Task 4: Test Playback of the Dynamic (Multi Bit-Rate) Stream (steps 32-43)

The screenshot displays the AWS CloudFront console interface. On the left, a navigation sidebar lists various CloudFront features: Distributions, Policies, Functions, What's new, Telemetry (Monitoring, Alarms, Logs), Reports & analytics (Cache statistics, Popular objects, Top referrers, Usage, Viewers), Security (Origin access, Field-level encryption), Key management (Public keys, Key groups), and Savings Bundle (Overview, Inventory, Purchase). The main content area shows the details for a specific CloudFront distribution named 'EO4UWXH5943EQ'. The 'General' tab is selected, displaying the distribution's details and settings. The distribution domain name is 'd1bvse52vjazwx.cloudfront.net', which is underlined in red. A red text overlay reads 'steps 32-37: the domain name of the CloudFront distribution'. The settings section includes fields for Description, Price class, Supported HTTP versions, AWS WAF, Alternate domain names, Standard logging, Cookie logging, and Default root object. The Continuous deployment section has a 'Create staging distribution' button.

CloudFront ×

[Distributions](#)
Policies
Functions
What's new [NEW](#)

▼ **Telemetry**
Monitoring
Alarms
Logs

▼ **Reports & analytics**
Cache statistics
Popular objects
Top referrers
Usage
Viewers

▼ **Security**
Origin access
Field-level encryption

▼ **Key management**
Public keys
Key groups

▼ **Savings Bundle**
Overview
Inventory
Purchase

CloudFront > Distributions > EO4UWXH5943EQ

EO4UWXH5943EQ View metrics

[General](#) | [Origins](#) | [Behaviors](#) | [Error pages](#) | [Geographic restrictions](#) | [Invalidations](#) | [Tags](#)

Details

Distribution domain name <u>d1bvse52vjazwx.cloudfront.net</u>	ARN arn:aws:cloudfront::168223555593:distribution/EO4UWXH5943EQ	Last modified May 27, 2023 at 6:19:54 AM UTC
--	--	---

Settings Edit

Description -	Alternate domain names -	Standard logging Off
Price class Use all edge locations (best performance)		Cookie logging Off
Supported HTTP versions HTTP/2, HTTP/1.1, HTTP/1.0		Default root object -
AWS WAF -		

Continuous deployment [Info](#)

Create staging distribution

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aws

Services

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Global

voclabs/user2564760=104222196@student.swin.edu.au @ 1682-2355...

Amazon S3

Buckets

Access Points

Object Lambda Access Points

Multi-Region Access Points

Batch Operations

IAM Access Analyzer for S3

Block Public Access settings for this account

Storage Lens

Dashboards

AWS Organizations settings

Feature spotlight

AWS Marketplace for S3

Amazon S3 > Buckets > c84296a1795493l4177663t1w1682-awstrainingreinvent-1hj60dvheaf6c > output/ > primary.m3u8

primary.m3u8

Copy S3 URIDownloadOpenObject actions

steps 38-40: the output playlist file is correct in the S3 bucket

PropertiesPermissionsVersions

Object overview

Owner awslabsc0w5667193t1683273937	S3 URI s3://c84296a1795493l4177663t1w1682-awstrainingreinvent-1hj60dvheaf6c/output/primary.m3u8
AWS Region US East (N. Virginia) us-east-1	Amazon Resource Name (ARN) arn:aws:s3::c84296a1795493l4177663t1w1682-awstrainingreinvent-1hj60dvheaf6c/output/primary.m3u8
Last modified May 27, 2023, 13:29:46 (UTC+07:00)	Entity tag (Etag) 5236d33dbac86745d36e6e7688fef3d2
Size 340.0 B	Object URL https://c84296a1795493l4177663t1w1682-awstrainingreinvent-1hj60dvheaf6c.s3.amazonaws.com/output/primary.m3u8
Type m3u8	
Key output/primary.m3u8	

Object management overview

The following bucket properties and object management configurations impact the behavior of this object.

Bucket properties	Management configurations
Bucket Versioning	Replication status

CloudShellFeedbackLanguage

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1:56 PM



 vse52vjazwx.cloudfront.net



1



steps 41-43: after constructing
the link and pasting it into the
browser, the video is playing
correctly



0:00 / 6:45

