

Project Plan: AWS Cloud Media Processing & Delivery

Introduction

This project plan outlines the steps required to build a media processing and delivery system on AWS, suitable for a cloud engineer role. The project integrates various AWS services, providing a real-world example for deploying secure and scalable media content. Follow this step-by-step approach to implement each component while learning relevant cloud skills.

Part 1: Initial Setup with Existing Skills

Goals:

1. Set up an S3 bucket for website hosting.
2. Configure CloudFront to serve content from the S3 bucket.
3. Use Route 53 to set up a custom domain.
4. Deploy an EC2 instance for backend services.

Skills Needed: Basic S3, CloudFront, Route 53, and EC2 configuration.

Estimated Time: 1-2 Weeks.

Outcome: Content delivery setup with foundational AWS services.

Part 2: Learning ECS and Docker for Media Processing

Goals:

1. Learn Docker basics and create containers for video processing.
2. Set up ECS (Elastic Container Service) to run containers.
3. Implement S3-ECS interaction for storing processed files.

AWS Cloud Project Plan: Media Processing & Delivery

Skills Needed: Docker, ECS, IAM role management.

Estimated Time: 2-3 Weeks.

Outcome: Understanding of containerized applications on ECS.

Part 3: SQS and EventBridge for Workflow Management

Goals:

1. Set up SQS for queuing multipart upload events.
2. Configure EventBridge to trigger workflows based on events.

Skills Needed: SQS, EventBridge, IAM roles and policies.

Estimated Time: 2 Weeks.

Outcome: Familiarity with messaging and event-driven architecture.

Part 4: AWS Step Functions for Orchestrating Workflows

Goals:

1. Learn Step Functions basics and create a workflow.
2. Integrate Step Functions with ECS for video transcoding tasks.

Skills Needed: Step Functions, ECS.

Estimated Time: 2 Weeks.

Outcome: Knowledge of workflow orchestration with Step Functions.

Part 5: Advanced CloudFront Configuration with Signed Cookies

AWS Cloud Project Plan: Media Processing & Delivery

Goals:

1. Configure CloudFront with signed cookies for secure media delivery.
2. Set up user authentication and restricted S3 access.

Skills Needed: Advanced CloudFront, S3 bucket policy.

Estimated Time: 1 Week.

Outcome: Secure content delivery practices with CloudFront.

Part 6: MongoDB Integration and API Development on EC2

Goals:

1. Set up MongoDB and connect it with EC2.
2. Implement API endpoints for data interaction.

Skills Needed: MongoDB basics, API development on EC2.

Estimated Time: 1-2 Weeks.

Outcome: Database integration for data persistence.

Estimated Timeline Overview

1. Weeks 1-2: Initial setup of S3, CloudFront, Route 53, and EC2.
2. Weeks 3-5: ECS and Docker for video processing.
3. Weeks 6-7: SQS and EventBridge setup.
4. Weeks 8-9: AWS Step Functions.
5. Week 10: Advanced CloudFront with signed cookies.
6. Weeks 11-12: MongoDB integration and API on EC2.