

AWS Educational Case Study for Swapnil Patni Classes



About the Customer

Swapnil Patni's Classes was founded in December 2010.

It provides specialized class-room training for students undergoing the Chartered Accountancy Course.

The Academy conducts model examinations to boost the confidence of the students. The conceptual explanations will be duly supported by practical examples, reference material, past examinations and revision test papers.

SPC are one of the major CA training classes in India. Students from different parts of India attain SPC classes for enhancements in their career. They also inspire students through motivational lectures as they believe without inspiration the best powers of the mind remain dormant.

Many CA topper students are from SPC batches additionally 1st AIR topper of November 2016 batch is student of SPC classes, and 85 rankers has achieved their milestone. The mark gainers and rankers itself reflects the quality of their classes.

Customer Challenge

Swapnil Patni classes are serving live video lectures through their custom application. Students wants to attains the live class online, also there is a provision of watching offline recorded videos. Faculty members want to create video tutorial and share the content with students and other faculty members.

Since multiple users create lots of journal, research papers, video tutorials every day, it becomes cumbersome to properly manage them, protect them and serve them while require.

Also, to update the study materials and improve the course it becomes inevitable to capture the learning analytic from the student outcomes/feedback while concentrating on what matters most to them.

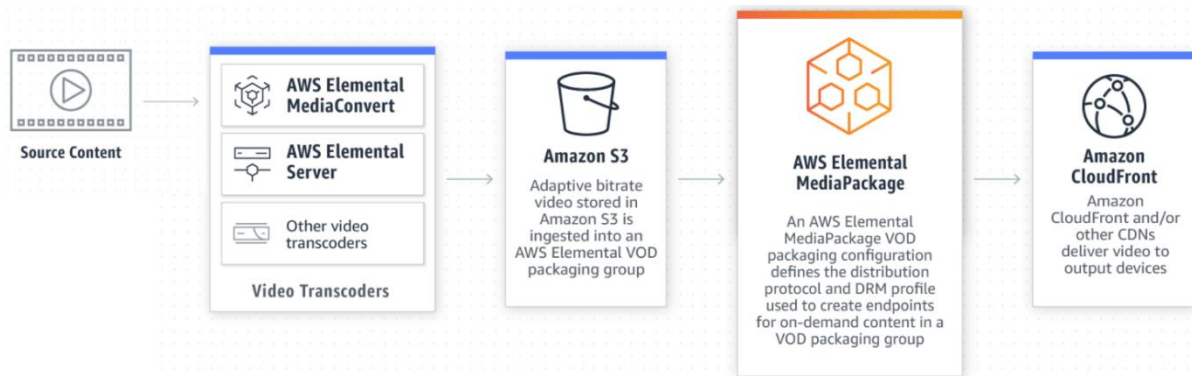
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The Solution

For live video lectures we have integrated **AWS Elemental MediaLive** which is a broadcast-grade live video processing service, create high-quality video streams for delivery to broadcast televisions and internet-connected multiscreen devices, like connected TVs, tablets, smart phones, and set-top boxes. The service works by encoding the live video lectures streams in real-time, taking a larger-sized live video source and compressing it into smaller versions for distribution to the students.

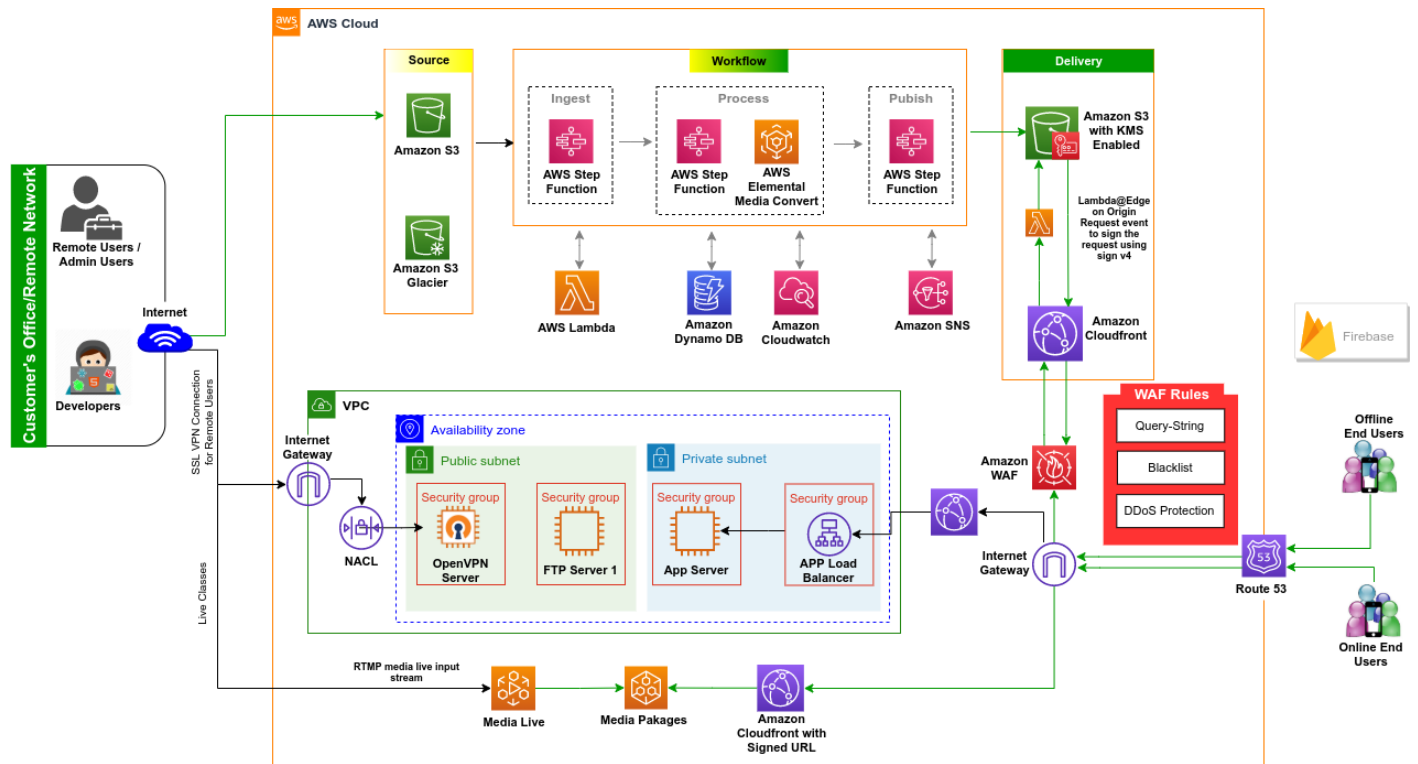
For offline video content and protection of the content we have integrated **AWS Elemental MediaConvert** and **AWS Elemental MediaPackage** services. MediConvert has the capability to convert the recorded video type and size which is suitable for audience. In MediaPackage we have used DRM to protect the media content.

Actually, all these three technologies help us built in VOD platform, which take care of everything – starting from media creation, formatting, protection and distribute the same without any hassle. The whole process is fully automated.



We have created a **simple feedback analyser** using AWS Step Function, Lambda, DynamoDB, SQS and SNS. Where we capture student's selections with the help of CloudTrail and log them in DynamoDB using a custom service (Lambda + Step Function + SNS). Basis on data captured in DynamoDB later we execute another Lambda which generate the most viewed tutorials, journal by the students. This helped SPC to identify the scope of improvement in their courses.

Solution Architecture



AWS Services Used

- ▶ API Gateway
- ▶ CloudFront
- ▶ CloudTrail
- ▶ CloudWatch
- ▶ Data Transfer
- ▶ DynamoDB
- ▶ Elastic Compute Cloud
- ▶ Elastic Load Balancing
- ▶ Elemental MediaConvert
- ▶ Elemental MediaLive
- ▶ Elemental MediaPackage
- ▶ Key Management Service
- ▶ Lambda
- ▶ Route 53
- ▶ Simple Notification Service
- ▶ Simple Queue Service
- ▶ Simple Storage Service
- ▶ Step Functions
- ▶ WAF

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Security Considerations

- AWS IAM role-based access control to restrict users to only the required resources.
- For any Administrative task Remote user have need to connect to VPN client for accessing the servers. All the RDP/SSH port are bound with OpenVPN server, also default ports will be changed to the custom port.
- Deploy the web application firewall on AWS Cloud, the web application firewall is having features IP sets, custom DDOS rules, Bad bots rule etc. It monitors web requests for associated all the running Amazon CloudFront distributions.
- Implemented the DDOS custom Rule and Bad Bot custom Rule for the blockage of unwanted and suspicious users. Anomaly detection filter is placed using lambda functions.

Results and Benefits

Its underlying IT architecture is now more flexible. Compared with traditional on-premises data centres, AWS requires much less time for setting up a business IT infrastructure and enables organizations to easily and rapidly scale their resources without being fettered by hardware configurations.

By developing native cloud applications on AWS, SPC is now able to respond faster to the market and accelerate its digital transformation.

MediaLive solution brings Broadcast-grade capabilities which is Reliable and easy to manage. The other two companions of this component MediaConvert and MediaPackage helps to successfully create VOD platform, which not only convert the raw video source in desired size and type but also help protecting the content using DRM.

Last but not the least custom solution of feedback analyser helps SPC to improve their tutorial contents, suitable schedules for classroom sessions and create more relevant subject stand best for the students.



About Workmates

Workmates core2cloud Solution Pvt. Ltd is an AWS Advance consulting partner and Leading Cloud Management Company in Eastern India. Workmates Core2cloud is a cloud managed services company focused on AWS services, the fastest growing AWS Advanced Consulting Partner in India. We focus on Managed services, Cloud Migration and Implementation of various value-added services on the cloud including but not limited to Cyber Security and Analytics. Our skills cut across various workloads like Microsoft, SAP, Media Solutions, DevOps, E-commerce, Analytics, IOT, Machine Learning, VR, AR etc. Our VR services are transforming many businesses.

Workmates has a yellow theme which is the colour of youth. Our Vibrant team of 100% certified resources brings the edge to customers for an End-to-End AWS partner, committed towards quality and supporting their business on a 24X7 basis.