

EndoHub™ achieves cost-saving, security and interoperability benefits with Minfy Technologies

Minfy™ a born in the cloud firm, is committed to helping enterprises with its impeccable IT solutions in the cloud Era. We help the organizations to move forward in the digital world by changing the way they use IT. For over 5 years, we have dedicated ourselves to providing the best in class & well-architecture cloud solutions to customers. We are committed to delivering today's best-of-breed cloud solutions to the organizations. We pioneered ourselves on SAP on cloud, NextGen Managed Services, DevOps, CI & CD , AI/ML & Micro services.

ABOUT CUSTOMER

EndoHub™ provides comprehensive, device-agnostic cloud-based image archival and communication systems that seamlessly work with any surgical imaging system, without conflicting with hospital-based networking and access controls. By utilizing the simple iOS and Android applications, a care provider can quickly acquire and upload images; securely store them to their cloud-based server, retrieve images for incorporation into patient records, and procedure reports or teaching materials. The collaborative tools improve patient outcomes, streamline reimbursement, and provide invaluable teaching tools.



The Problem

VIDEO ENCODING

MULTI FORMAT FROM MULTI SOURCE

The surgical and other clinical videos suffered accessibility issues because of their lack of compatibility with different digital and mobile devices. This drastically left unfavorable impact on overall operation, delayed decision making, incurred additional cost for deploying device-specific content.

SECURE PATIENT DATA

INAPPROPRIATE DATA GOVERNANCE

The lack of a governance plan to secure Meta data led to a number of operational barriers. Sharing the key health information reliably and effectively was has become a challenge. The data management required urgent rework to facilitate integrity. There is a need of providing common platform to use patient content.

ENCRYPTED DATA

DATABASE & SCHEMA MANAGEMENT

The absence of a strong mechanism to securely store the encryption keys made commission of data and resource riskier. The unwelcoming probabilities were compromised keys; which would make data theft very apparent with more damaging outcomes such as corrupt database inaccessible even to those with true clearance.

The Expectations

The company wanted to create a uniformed care giving experience by enabling key stakeholders engage in meaningful clinical activities, on the backdrop of a relevant digital transformation plan. The desired goal could only be achieved on a configurable environment that seamlessly complies with strict security requirements, and provides higher access control, flawless ownership of crucial clinical content and global scalability. There was an apparent urgency for a fully optimized, event-driven system that could redefine communication and facilitate better patient care, and progressive medical decisions.

Technologies used

AWS S3

It enables lowlatency data storage or retrieval regardless of time and localtional barriers. Data storage in regionally segregated buckets can facilitate application efficiency for all users in geographically isolated locations. Strong authentication can offer industry-leading security for regionally stored data

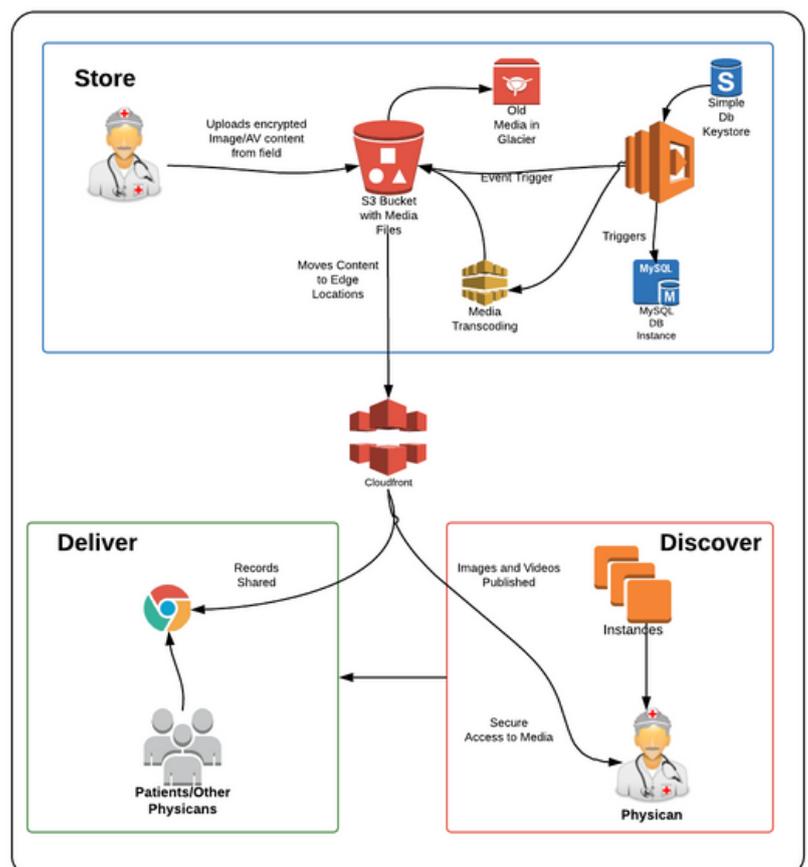
Cloudfront CDN

can facilitate higher response tltimes and distribution of large file content to a sizeable number of users. Accelerating the delivery of dynamic content and simplified retrieval of the clinical data can accelerate high-end productivity outcomes

Amazon S3 Glacier

can provide affordable cloud storage service for data archiving and long-term backup, along with durability, security and compliance

- A mobile and desktop application was developed to allow uploading video files
- Patient meta data was encrypted before uploading to S3
- All videos uploaded in RAW video formats were encoded using AWS Elastic Transcoder
- Once the transcoding was completed videos were stored in an S3 buckets with the meta data stored in the database
- AWS Cloudfront was configured to serve the files across the world with AWS S3 bucket as the endpoint
- Doctors could mark the files to be archived. Those files would move to
- AWS Glacier as the final store until deleted.
- Portal front end was developed using AngularJS. Since the application was developed using the Service
- Oriented Architecture portal front end could directly be served out of AWS S3
- Encryption keys were stored in Simple DB



The Results

The architecture ensured up time, security and accessibility. The Client got the application up and running at a fraction of the expected hosting cost without ever worrying about provisioning or processing the servers during peak or off peak demands.

1. Cost of streaming the videos were brought to the minimal by the use of AWS Cloudfront as servers weren't required to stream the same.
2. Since AWS Elastic Transcoder was used, converting videos from multiple source formats to universal mp4 was done easily. No upfront investment into costly encoding licenses were required to be done.
3. Front end was developed using AngularJS and stored on S3. This enabled serving the files directly through AWS Cloudfront with endpoint as S3.
4. AWS ACM was used to enable SSL which is provided for free thus saving cost on purchasing SSL certificates
5. No web servers were required still guaranteeing S3s availability and durability

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