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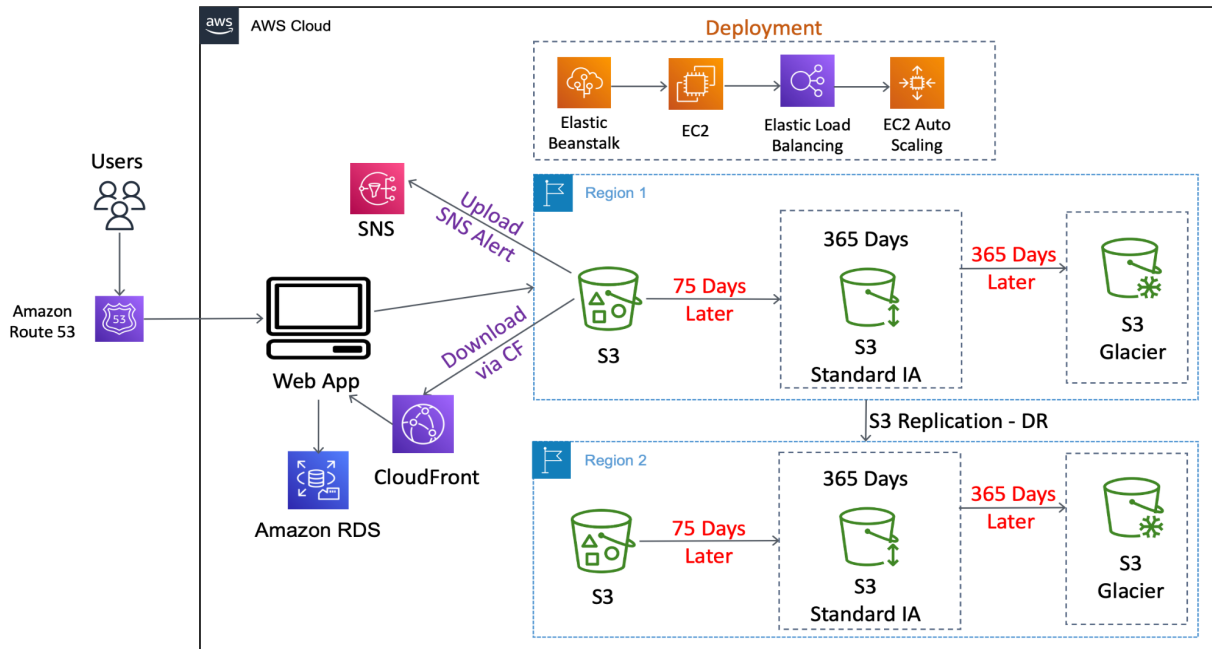
CMPE 281

[EzCloudStore](#)

## **EzCloudStore**

EzCloudStore is a 3-tier web application that allows users to upload, download, update, delete, and list files using the Amazon Web Services(AWS) cloud architecture via utilizing distinct AWS tools and services. EzCloudStore users can upload several files one by one with a maximum file size of up to 10 MegaBytes(MB). EzCloudStore users can also modify the contents of the files that they have already uploaded using the update feature which can later be downloaded instantly using the download feature. Users can monitor the timestamps of their uploaded and updated files along with the date of the uploaded and updated file while also mentioning a description in the Description dialog box for the files that they upload and/or update/modify. Whenever users want to delete a file they can delete the file they desire by utilizing the delete button. The EzCloudStore application handles file storage using various AWS cloud services.

- EzCloudStore concentrates on CRUD operations on all the files that are uploaded by the users.
- EzCloudStore allows users to own an individual account for file storage that allows them to access it anywhere, anytime from the cloud as required by them for usage.
- EzCloudStore can be accessed @ <http://www.ezcloudstore.com> from any electronic device with the ability to connect to the Internet.



## Architecture Diagram

### Tech Stack:

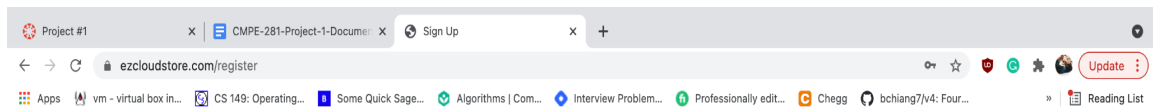
- Java, MySQL RDS with JDBC connection
- Java Server Pages, HTML, CSS, JavaScript
- Server-side programming
- IntelliJ
- Spring Boot
- Apache Maven
- Java 8
- Tomcat 8.5

## **EzCloudStore Features:**


- Sign Up
- Sign In/Login
- Upload File
- Browse Files
- Update File
- Download File
- Delete File
- Admin Panel Login

### **Sign Up:**

- This feature allows the users to register their accounts by providing the required information that will be consolidated and deposited in the database.



## Sign Up



YOUR CLOUD STORE

[Already have an account? Sign in](#)

**First Name**

**Last Name**

**Email ID**

**Password**


Project #1 x CMPE-281-Project-1-Docume... x Login x +

ezcloudstore.com/login

Update

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Congratulations, your account has been successfully created. Please log in..!



**EzCloud Store**  
YOUR CLOUD STORE

[Admin Login!](#)  
[Login with Google!](#)  
[Sign Up!](#)

**Login**

**Email ID**

**Password**

Login

### Sign In:

- This feature allows the users to sign in to their accounts and access the web application's dashboard by providing the credentials that were used upon registration of their account during the sign-up process.

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ezcloudstore.com/dashboard

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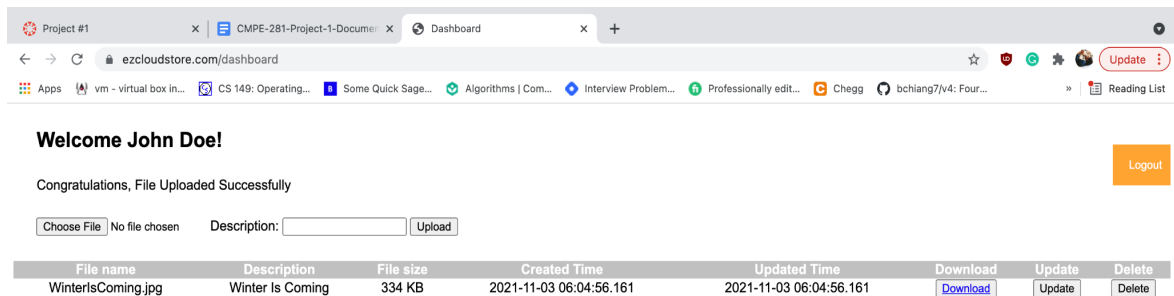
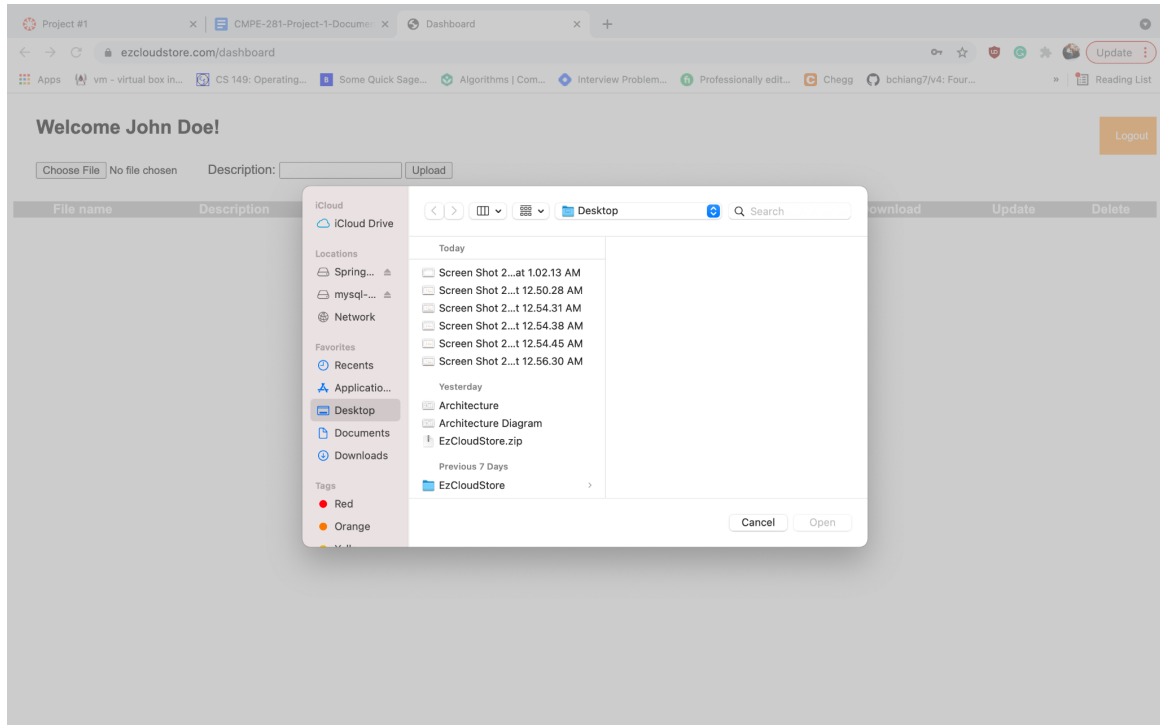
**Welcome John Doe!**

Choose File No file chosen Description:  Upload Logout

File name	Description	File size	Created Time	Updated Time	Download	Update	Delete
-----------	-------------	-----------	--------------	--------------	----------	--------	--------

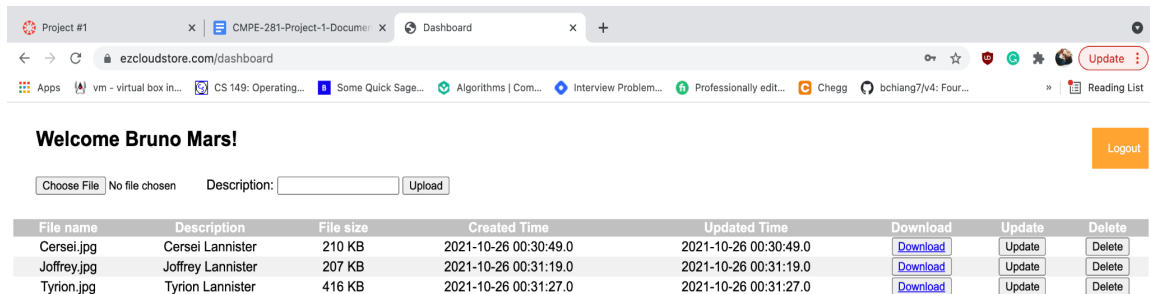
## Upload File:

- This feature allows the users to upload a new file and store the file in the S3 bucket. The maximum file size that can be allowed to be uploaded is 10MB.



## Browse Files:

- This feature allows the users to view the list of files that are already uploaded by them on their dashboard.



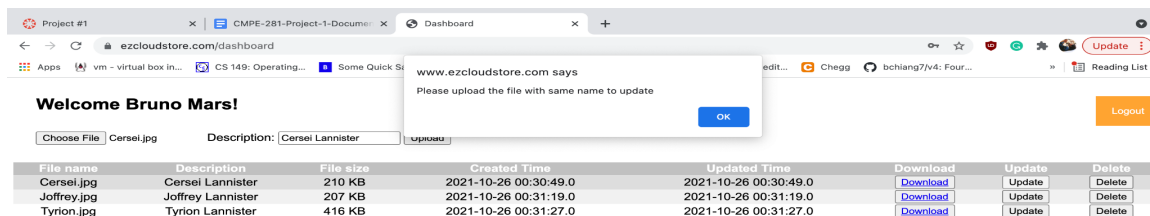
Welcome Bruno Mars!

Choose File No file chosen Description:  Upload

File name	Description	File size	Created Time	Updated Time	Download	Update	Delete
Cersei.jpg	Cersei Lannister	210 KB	2021-10-26 00:30:49.0	2021-10-26 00:30:49.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>
Joffrey.jpg	Joffrey Lannister	207 KB	2021-10-26 00:31:19.0	2021-10-26 00:31:19.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>
Tyrion.jpg	Tyrion Lannister	416 KB	2021-10-26 00:31:27.0	2021-10-26 00:31:27.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>

## Update File:

- This feature allows the users to Update already uploaded files along with a description of the file. Users can track the updated files by monitoring the timestamps of the file creation and file update on their dashboard.



Welcome Bruno Mars!

Choose File Cersei.jpg Description: Cersei Lannister Upload

www.ezcloudstore.com says  
Please upload the file with same name to update

OK

File name	Description	File size	Created Time	Updated Time	Download	Update	Delete
Cersei.jpg	Cersei Lannister	210 KB	2021-10-26 00:30:49.0	2021-10-26 00:30:49.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>
Joffrey.jpg	Joffrey Lannister	207 KB	2021-10-26 00:31:19.0	2021-10-26 00:31:19.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>
Tyrion.jpg	Tyrion Lannister	416 KB	2021-10-26 00:31:27.0	2021-10-26 00:31:27.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>

Project #1

CMPE-281-Project-1-Docume

Dashboard

+

ezcloudstore.com/dashboard

Update

Apps

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Reading List

Welcome Bruno Mars!

Logout

Congratulations, File Updated Successfully

Choose File

No file chosen

Description:

Upload

File name	Description	File size	Created Time	Updated Time	Download	Update	Delete
Cersei.jpg	Cersei Lannister	210 KB	2021-10-26 00:30:49.0	2021-11-03 06:09:03.077	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>
Joffrey.jpg	Joffrey Lannister	207 KB	2021-10-26 00:31:19.0	2021-10-26 00:31:19.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>
Tyrion.jpg	Tyrion Lannister	416 KB	2021-10-26 00:31:27.0	2021-10-26 00:31:27.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>

## Download File:

- This feature allows the users to download the uploaded files with a link to download the file via a URL.

Project #1

CMPE-281-Project-1-Docume

Dashboard

+

ezcloudstore.com/dashboard

Update

Apps

vm - virtual box in...

CS 149: Operating...

Some Quick Sage...

Algorithms | Com...

Interview Problem...

Professionally edit...

Chegg

bchiang7/v4: Four...

Reading List

Welcome Bruno Mars!

Logout

Congratulations, File Updated Successfully

Choose File

No file chosen

Description:

Upload

File name	Description	File size	Created Time	Updated Time	Download	Update	Delete
Cersei.jpg	Cersei Lannister	210 KB	2021-10-26 00:30:49.0	2021-11-03 06:09:03.077	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>
Joffrey.jpg	Joffrey Lannister	207 KB	2021-10-26 00:31:19.0	2021-10-26 00:31:19.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>
Tyrion.jpg	Tyrion Lannister	416 KB	2021-10-26 00:31:27.0	2021-10-26 00:31:27.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>

Download

Tyrion (2).jpg

Tyrion (1).jpg

Joffrey.jpg

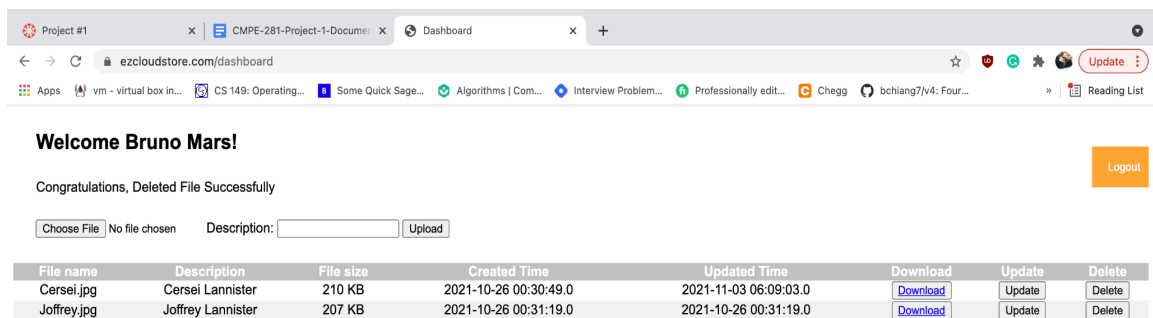
Cersei (3).jpg

Cersei (2).jpg

Show All

## Delete File:

- This feature allows the users to delete the files which they do not wish to utilize via the delete button.



The screenshot shows a web browser window with the URL `ezcloudstore.com/dashboard`. The page displays a welcome message for "Bruno Mars" and a confirmation message: "Congratulations, Deleted File Successfully". Below this, there is a file upload section with a "Choose File" button, a text input for "Description:", and an "Upload" button. A table lists the files currently in the store:

File name	Description	File size	Created Time	Updated Time	Download	Update	Delete
Cersei.jpg	Cersei Lannister	210 KB	2021-10-26 00:30:49.0	2021-11-03 08:09:03.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>
Joffrey.jpg	Joffrey Lannister	207 KB	2021-10-26 00:31:19.0	2021-10-26 00:31:19.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>




A horizontal strip of file thumbnails is shown, including "Tyrion (2).jpg", "Tyrion (1).jpg", "Joffrey.jpg", "Cersei (3).jpg", and "Cersei (2).jpg". Each thumbnail has a small upward arrow icon to its right. At the end of the strip is a "Show All" button and a close icon (X).

## Admin Panel Login:

- This feature allows the user with administrator access and credentials to log in to the admin panel where the admin can be able to view the record of all the files that were uploaded by every user on EzCloudStore along with the ability to download as well as delete any particular file uploaded by any user.



Login



YOUR CLOUD STORE

Email ID

admin@sjsu.edu

Password

\*\*\*\*\*

Login

[User? Login here!](#)

Welcome Admin!

Logout

User	File name	Description	File size	Created Time	Updated Time	Download	Delete
alanwalker@gmail.com	Arya.jpg	Arya Stark	823 KB	2021-10-26 00:29:13.0	2021-10-26 00:30:10.0	<a href="#">Download</a>	<a href="#">Delete</a>
alanwalker@gmail.com	Ned.jpg	Ned Stark	375 KB	2021-10-26 00:29:56.0	2021-10-26 00:29:56.0	<a href="#">Download</a>	<a href="#">Delete</a>
brunomars@gmail.com	Cersei.jpg	Cersei Lannister	210 KB	2021-10-26 00:30:49.0	2021-11-03 06:09:03.0	<a href="#">Download</a>	<a href="#">Delete</a>
brunomars@gmail.com	Joffrey.jpg	Joffrey Lannister	207 KB	2021-10-26 00:31:19.0	2021-10-26 00:31:19.0	<a href="#">Download</a>	<a href="#">Delete</a>
michaeljackson@gmail.com	Daenerys.jpg	Daenerys Targaryen	380 KB	2021-10-26 00:37:23.0	2021-10-26 00:37:23.0	<a href="#">Download</a>	<a href="#">Delete</a>
rohanbpatel98@gmail.com	Valar Dohaeris.jpg	All Men Must Serve	195 KB	2021-10-26 00:39:36.0	2021-10-26 00:39:36.0	<a href="#">Download</a>	<a href="#">Delete</a>
rohanbpatel98@gmail.com	Valar Morghulis.jpg	All Men Must Die	256 KB	2021-10-26 00:39:45.0	2021-10-26 00:39:45.0	<a href="#">Download</a>	<a href="#">Delete</a>
johnndoe@gmail.com	WintersComing.jpg	Winter Is Coming	334 KB	2021-11-03 06:04:56.0	2021-11-03 06:04:56.0	<a href="#">Download</a>	<a href="#">Delete</a>

Welcome Admin!

Logout

Congratulations, Deleted User File Successfully

User	File name	Description	File size	Created Time	Updated Time	Download	Delete
alanwalker@gmail.com	Arya.jpg	Arya Stark	823 KB	2021-10-26 00:29:13.0	2021-10-26 00:30:10.0	Download	Delete
brunomars@gmail.com	Cersei.jpg	Cersei Lannister	210 KB	2021-10-26 00:30:49.0	2021-11-03 06:09:03.0	Download	Delete
brunomars@gmail.com	Joffrey.jpg	Joffrey Lannister	207 KB	2021-10-26 00:31:19.0	2021-10-26 00:31:19.0	Download	Delete
michaeljackson@gmail.com	Daenerys.jpg	Daenerys Targaryen	380 KB	2021-10-26 00:37:23.0	2021-10-26 00:37:23.0	Download	Delete
rohanbpatel98@gmail.com	Valar Dohaeris.jpg	All Men Must Serve	195 KB	2021-10-26 00:39:36.0	2021-10-26 00:39:36.0	Download	Delete
rohanbpatel98@gmail.com	Valar Morghulis.jpg	All Men Must Die	256 KB	2021-10-26 00:39:45.0	2021-10-26 00:39:45.0	Download	Delete
johndoe@gmail.com	WinterIsComing.jpg	Winter Is Coming	334 KB	2021-11-03 06:04:56.0	2021-11-03 06:04:56.0	Download	Delete

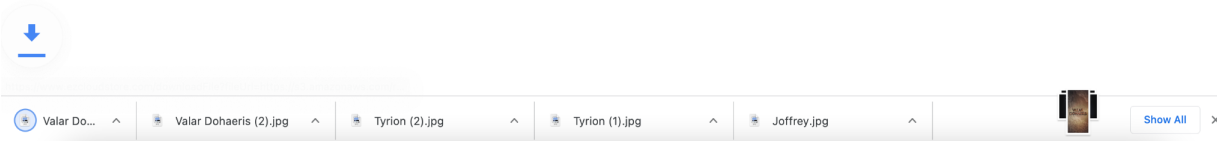


Welcome Admin!

Logout

Congratulations, Deleted User File Successfully

User	File name	Description	File size	Created Time	Updated Time	Download	Delete
alanwalker@gmail.com	Arya.jpg	Arya Stark	823 KB	2021-10-26 00:29:13.0	2021-10-26 00:30:10.0	Download	Delete
brunomars@gmail.com	Cersei.jpg	Cersei Lannister	210 KB	2021-10-26 00:30:49.0	2021-11-03 06:09:03.0	Download	Delete
brunomars@gmail.com	Joffrey.jpg	Joffrey Lannister	207 KB	2021-10-26 00:31:19.0	2021-10-26 00:31:19.0	Download	Delete
michaeljackson@gmail.com	Daenerys.jpg	Daenerys Targaryen	380 KB	2021-10-26 00:37:23.0	2021-10-26 00:37:23.0	Download	Delete
rohanbpatel98@gmail.com	Valar Dohaeris.jpg	All Men Must Serve	195 KB	2021-10-26 00:39:36.0	2021-10-26 00:39:36.0	Download	Delete
rohanbpatel98@gmail.com	Valar Morghulis.jpg	All Men Must Die	256 KB	2021-10-26 00:39:45.0	2021-10-26 00:39:45.0	Download	Delete
johndoe@gmail.com	WinterIsComing.jpg	Winter Is Coming	334 KB	2021-11-03 06:04:56.0	2021-11-03 06:04:56.0	Download	Delete



## EzCloudStore Dashboard:

- File Name
- Description
- File Size
- File Creation Date & Time
- File Update Date & Time

Project #1 x CMPE-281-Project-1-Docume x Dashboard x +

ezcloudstore.com/dashboard

Update

Apps vm - virtual box in... CS 149: Operating... Some Quick Sage... Algorithms | Com... Interview Problem... Professionally edit... Chegg bchiang7/v4: Four... Reading List

Welcome Rohan Patel!

Choose File No file chosen

Description:

Upload

File name	Description	File size	Created Time	Updated Time	Download	Update	Delete
Valar Dohaeris.jpg	All Men Must Serve	195 KB	2021-10-26 00:39:36.0	2021-10-26 00:39:36.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>
Valar Morghulis.jpg	All Men Must Die	256 KB	2021-10-26 00:39:45.0	2021-10-26 00:39:45.0	<a href="#">Download</a>	<a href="#">Update</a>	<a href="#">Delete</a>

## **EzCloudStore Overview:**

- Every user must sign up on the web application to be able to access the features of the EzCloudStore application via their unique email and password. The database consists of two tables that segregate the users from accessing other users' data.
- Upload a file with the max file size of 10MB - an alert is issued to restrain from uploading files with a larger size.
- File data is to be stored on the S3 bucket and in a reserve replica bucket in a different region by utilizing cross-region replication methods.
- Created a lifecycle rule for the project similar to homework #2 assignment. AWS S3 Standard Access is applied for the first 75 days. After 75 days, S3 Standard Access will convert the bucket to S3-Infrequent Access(S3-IA). After one year, the data will be stored on the S3 archive through S3 Glacier and will be kept for one additional year for legal/compliance reasons henceforth, after 730 days the data will be deleted from the system.
- Registered the domain @ [ezcloudstore.com](http://ezcloudstore.com) using AWS Route53 and utilized hosted zones from Route53.
- For every instance of CRUD operation, the file data will be transmitted to the Amazon S3 bucket and Amazon RDS MySQL instance to keep track of the files' information.
- AWS tools are correlated in a fashion that users have a more agile way to download any file from the S3 bucket via utilizing the CloudFront distribution service. Also, blocked Cuba region as was done earlier in the homework #2 assignment as per instructions.
- Used Elastic beanstalk to accommodate multiple AZs and regions with high availability for EC2 instances and S3 buckets.

- If a user uploads a file for the initial time it will generate a new directory for the users via their email id for isolation on the S3 bucket.
- Route53 is linked to CloudFront which is linked to Elastic beanstalk.
- Elastic Beanstalk with EC2 and Elastic Load Balancing is implemented with auto-scaling up to four instances along with health checkups.
- Used CloudWatch alarm that will trigger when the health of the elasticbeanstalk environment updates and will broadcast an email alert to the subscribed user via email or phone.
- Enabled S3 Transfer acceleration to gain more high-speed acceleration for download and upload. Also, enabled bucket versioning.
- EC2 instances are available in different AZs so that in the event of failure of one of the instances, another will spin up by configuring auto-scaling to four instances with an upper threshold of 6000000 that will produce a fresh instance to load balance the application.
- Used the Simple Notification Service(SNS) to relay alerts to the user upon the downloading of a file via the user.

**GitHub:** <https://github.com/rohanbhadreshpatel/EzCloudStore>

## **References:**

- <https://docs.aws.amazon.com/>
- <https://www.ezcloudstore.com/>