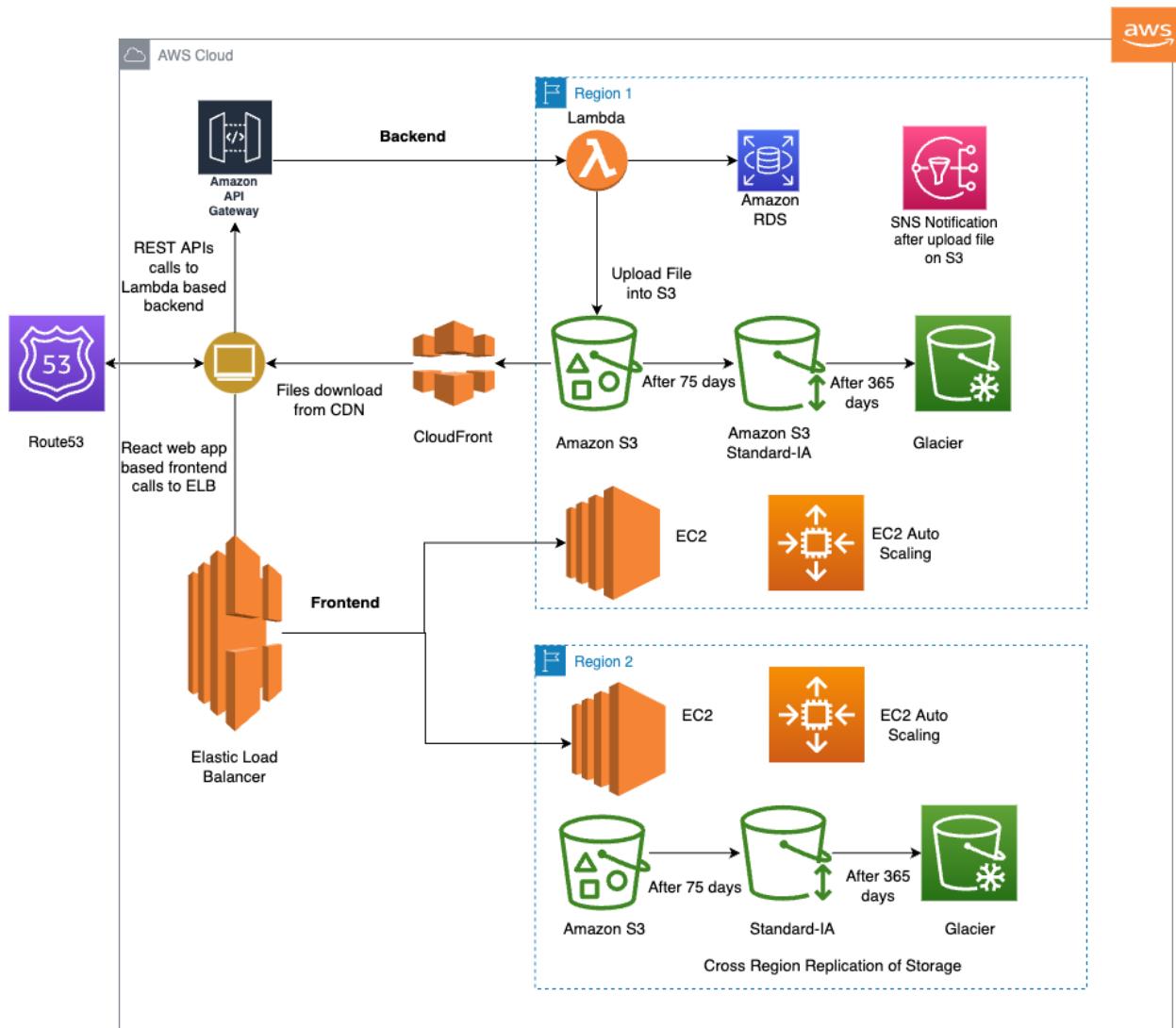


**Name:** Priya Gupta  
**Topic:** Eternal Store

**Student ID**  
**016709472**

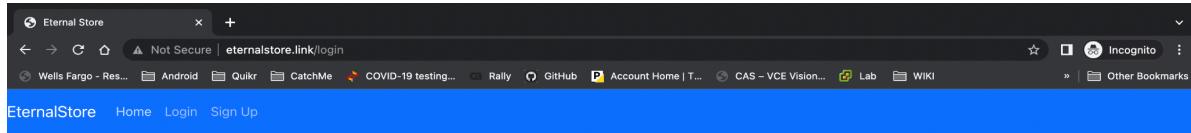
**Domain Name:** <http://eternalstore.link/>

### Architectural Diagram



**Domain Name:** <http://eternalstore.link/>

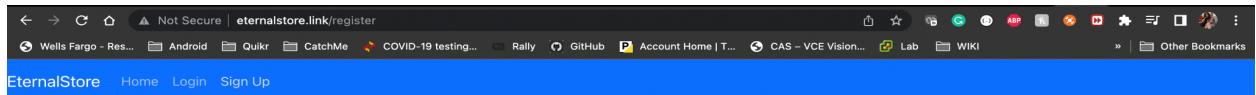
- **Landing Page where users can see login, Sign Up**



Sign in to continue to EternalStore!

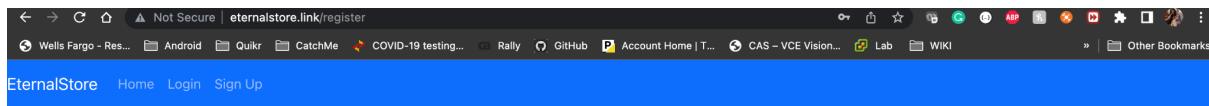
A simple login form enclosed in a light gray box. It features a placeholder user icon at the top, followed by two input fields labeled 'Email' and 'Password', each with a corresponding text input box. At the bottom is a blue 'Login' button.

- **EternalStore User Signup:** Users can signup on EternalStore by using their email.



Try EternalStore For Free!

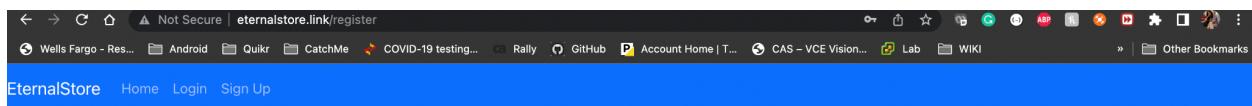
A sign-up form enclosed in a light gray box. It features a placeholder user icon at the top, followed by four input fields labeled 'First Name', 'Last Name', 'Email', and 'Password', each with a corresponding text input box. At the bottom is a blue 'Sign Up' button.



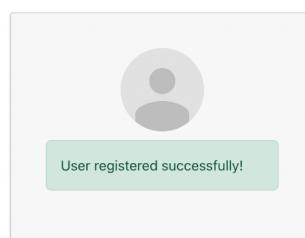
Try EternalStore For Free!

A screenshot of the registration form from the previous image, but now with a green success message at the bottom: "User registered successfully!". The rest of the form and its fields remain the same.

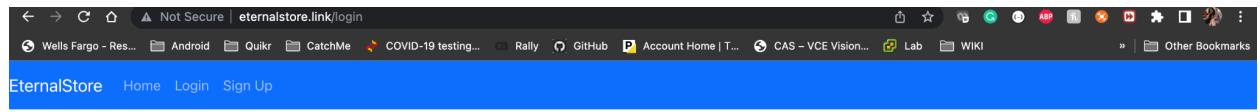
A Message will pop up “**User registered successfully!**”



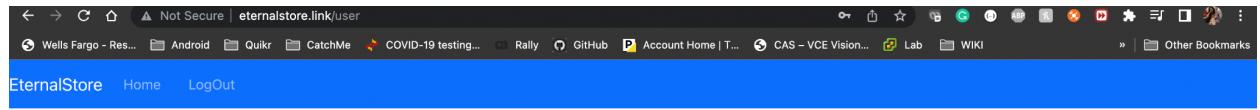
Try EternalStore For Free!



- **EternalStore Login:** Signed up users can use the site by login using their registered email.



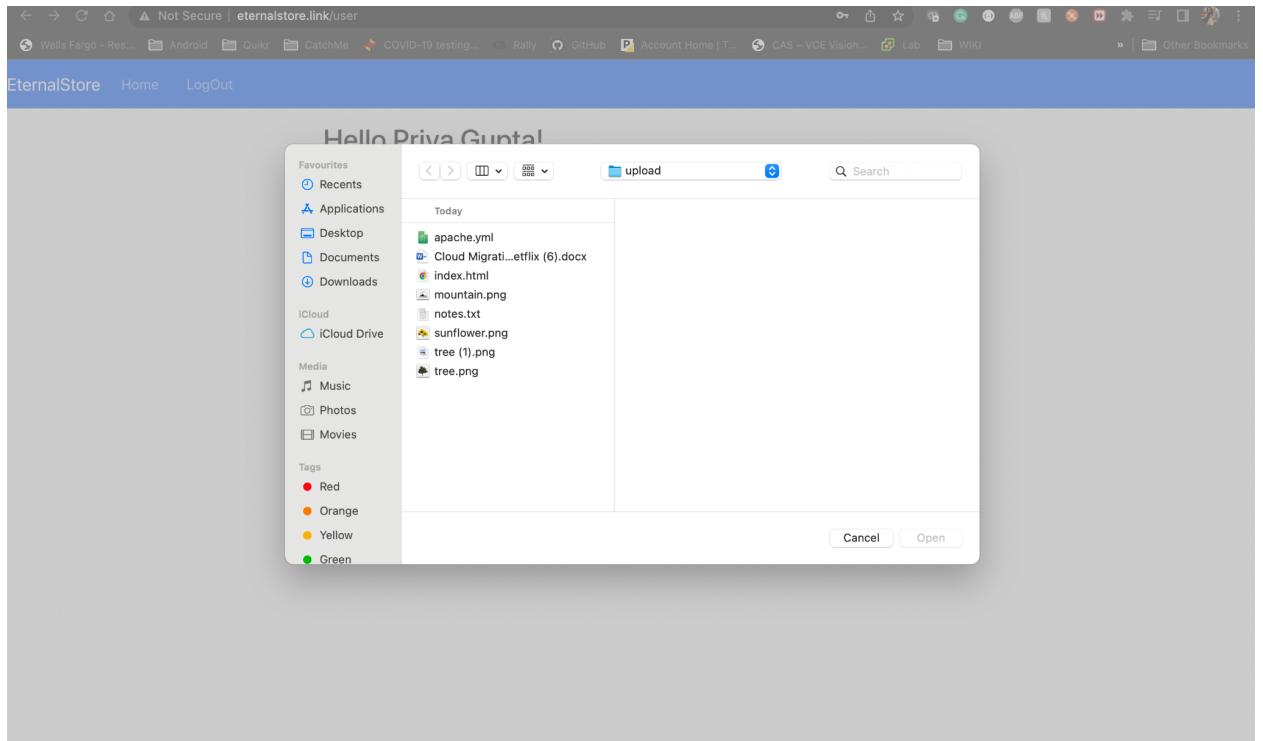
Sign in to continue to EternalStore!

A screenshot of a login form. It features a placeholder user icon at the top. Below it are two input fields: 'Email' containing 'priya.gupta@sjtu.edu' and 'Password' containing '.....'. At the bottom is a blue 'Login' button.

Hello Priya Gupta!

My Drive			File Upload
Name	Owner	Last Modified	

- **Upload File :** Signed in users can upload their files in cloud by using the “File Upload” button shown on their Home page. In the example below, the user selected “tree.png”



- The files shown on the Home page are sorted by last modified time. So the recently updated file would show up on the top in the list.

The screenshot shows a web browser window with the URL [Not Secure | eternalstore.link/user](https://eternalstore.link/user). The page title is "EternalStore". Below the title, there are links for "Home" and "LogOut". The main content area displays a heading "Hello Priya Gupta!" followed by a table titled "My Drive". The table has columns for "Name", "Owner", and "Last Modified". It lists three files: "tree.png", "index.html", and "sunflower.png", all owned by "Priya Gupta" and modified on "10/13/2022, 11:33:47 PM". Each file has edit, download, and delete icons.

Hello Priya Gupta!

My Drive

[File Upload](#)

Name	Owner	Last Modified	
tree.png	Priya Gupta	10/13/2022, 11:33:47 PM	
index.html	Priya Gupta	10/13/2022, 11:33:37 PM	
sunflower.png	Priya Gupta	10/13/2022, 11:33:20 PM	

- The uploaded files are stored in S3 in the directory for the user. Each user is assigned a directory (user's primary id is used for directory name) for storage isolation.

The screenshot shows a web browser window with the URL [s3.console.aws.amazon.com/s3/buckets/cf-simple-s3-origin-cloudfrontors3-042466744933?region=us-east-1&prefix=f85c6db4-5429-4c61-b56d-b5222ab355f0/](https://s3.console.aws.amazon.com/s3/buckets/cf-simple-s3-origin-cloudfrontors3-042466744933?region=us-east-1&prefix=f85c6db4-5429-4c61-b56d-b5222ab355f0/). The page title is "Amazon S3". The left sidebar includes sections for "Buckets", "Access Points", "Object Lambda Access Points", "Multi-Region Access Points", "Batch Operations", "Access analyzer for S3", "Block Public Access settings for this account", "Storage Lens", "Dashboards", "AWS Organizations settings", "Feature spotlight", and "AWS Marketplace for S3". The main content area shows the "Objects" tab selected. It displays a list of objects with a total count of 3. The objects are "index.html", "sunflower.png", and "tree.png", all of which are "Standard" storage class and have a size of 99.0 B, 256.8 KB, and 288.8 KB respectively. The last modified date for all files is October 13, 2022, at 16:33:38 UTC-07:00.

For changing the storage tier to standard IA then Glacier, LifeCycle rule is configured on s3 bucket. Cross region replication is implemented on s3 bucket.

The screenshot shows the AWS S3 console with the path: Amazon S3 > Buckets > cf-simple-s3-origin-cloudfrontors3-042466744933 > Lifecycle configuration > MyBucketLifeCycleRule. The page displays the Lifecycle rule configuration with the following details:

Lifecycle rule name	Prefix	Minimum object size
MyBucketLifeCycleRule	-	-

Status: Enabled. Scope: Entire bucket.

**Review transition and expiration actions:**

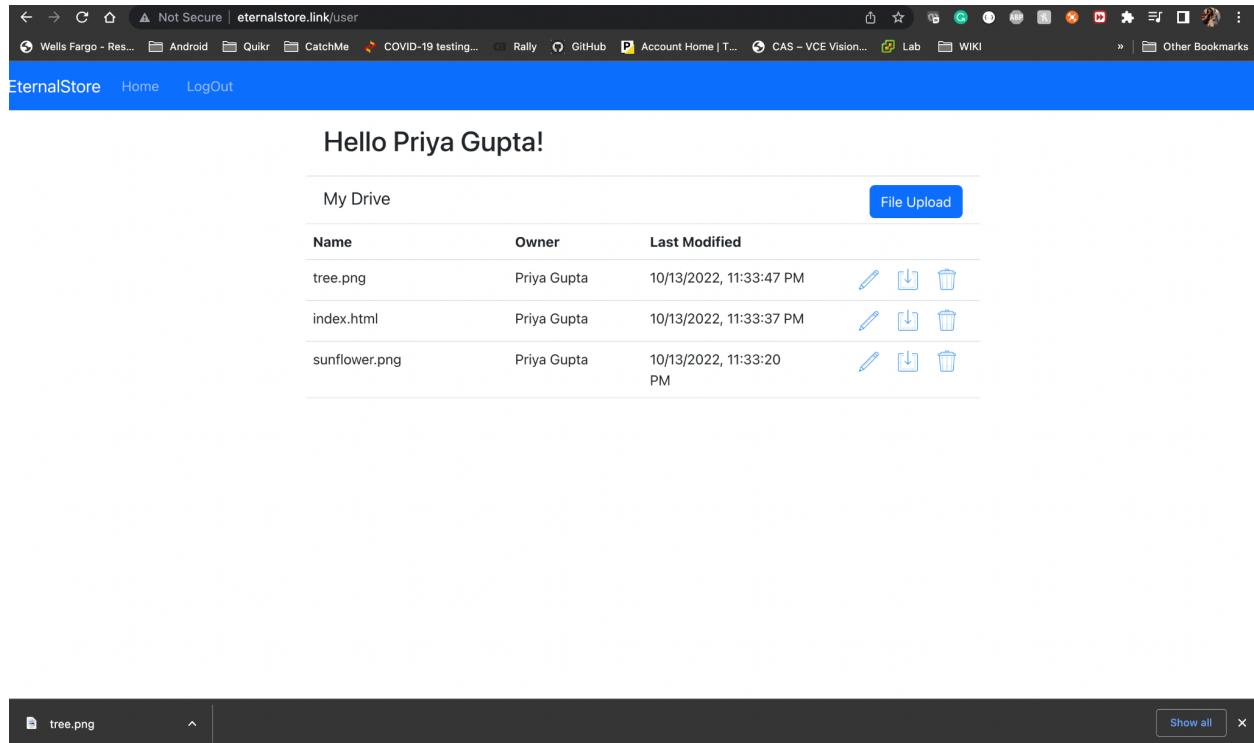
Current version actions	Noncurrent versions actions
Day 0 • Objects uploaded	Day 0 No actions defined.
↓	
Day 75 • Objects move to Standard-IA	

**SNS :** Amazon SNS service is used for email notification when files are uploaded on s3 bucket.

The screenshot shows the AWS SNS console with the path: Amazon SNS > Subscriptions. The page displays the Subscriptions (1) table with the following data:

ID	Endpoint	Status	Protocol	Topic
6369b94a-18d1-4bdd-a52f-61e7fabc149a	priya.gupta@sjtu.edu	Confirmed	EMAIL	email_notification

- **Downloading the files:** Cloudfront urls are provided to download the file. Users can click on the download icon next to the file name which would start downloading the file using cloudfront.



The screenshot shows a web browser window with a blue header bar. The address bar displays "Not Secure | eternalstore.link/user". Below the address bar, there is a bookmarks bar with various links like "Wells Fargo - Res...", "Android", "Quirk", "CatchMe", "COVID-19 testing...", "Rally", "GitHub", "Account Home | T...", "CAS - VCE Vision...", "Lab", and "WIKI". The main content area has a blue header with the text "Hello Priya Gupta!". Below this is a table titled "My Drive" with three rows of data. The table columns are "Name", "Owner", and "Last Modified". The rows show files: "tree.png" (Owner: Priya Gupta, Last Modified: 10/13/2022, 11:33:47 PM), "index.html" (Owner: Priya Gupta, Last Modified: 10/13/2022, 11:33:37 PM), and "sunflower.png" (Owner: Priya Gupta, Last Modified: 10/13/2022, 11:33:20 PM). Each row has a "File Upload" button and three icons (edit, download, delete) in a blue box. At the bottom of the page, there is a dark bar with a file icon labeled "tree.png", a "Show all" button, and a close button.

Name	Owner	Last Modified
tree.png	Priya Gupta	10/13/2022, 11:33:47 PM
index.html	Priya Gupta	10/13/2022, 11:33:37 PM
sunflower.png	Priya Gupta	10/13/2022, 11:33:20 PM

**CloudFront** : It's used to reduce the latency while downloading the files from s3 bucket.

- **Storing files metadata in DB:** File's metadata (eg. name, url, update time etc) are stored in a sql based Amazon RDS.

id	name	url	createdAt	updatedAt	userId
5d9f98f-0e73-4ebf-8642-a9fcfafebd07	index.html	https://d150rnp844rqs.cloudfront.net/f85c6db4...	2022-10-13 23:33:37	2022-10-13 23:33:37	b5c6db4-5429-4c61-b56d-b5222ab3550
9223a346-cb36-7374-9adc-a22011114ed8	sunflower.png	https://d150rnp844rqs.cloudfront.net/f85c6db4...	2022-10-13 23:33:20	2022-10-13 23:33:20	b5c6db4-5429-4c61-b56d-b5222ab3550
b115ea49-c8a8-463b-9e6e-8cfcd5596d7	tree.png	https://d150rnp844rqs.cloudfront.net/f85c6db4...	2022-10-13 23:33:47	2022-10-13 23:33:47	b5c6db4-5429-4c61-b56d-b5222ab3550
be60df7c-5dae-45b9-9a2e-8ed1e5a5e347	notes.txt	https://d150rnp844rqs.cloudfront.net/f85c6db4...	2022-10-14 00:05:29	2022-10-14 00:05:29	b5c6db4-5429-4c61-b56d-b5222ab3550

**Deleting user file:** For a file deletion from cloud, user can click on delete icon next to the file name. This would tell backend to delete the file from S3.

Hello Priya Gupta!

Name	Owner	Last Modified	
notes.txt	Priya Gupta	10/14/2022, 12:05:29 AM	
tree.png	Priya Gupta	10/13/2022, 11:33:47 PM	
index.html	Priya Gupta	10/13/2022, 11:33:37 PM	

- **Route53 :** EternalStore domain is registered using Route53. It is configured to use the hosted ELB to route traffic for EternalStore.link to our frontend servers hosted in EC2.

us-east-1.console.aws.amazon.com/route53/v2/home#Dashboard

Wells Fargo - Res... Android Quirkr CatchMe COVID-19 testing... Rally GitHub Account Home | T... CAS - VCE Vision... Lab WIKI Other Bookmarks Global Lovy Gupta

aws Services Search for services, features, blogs, docs, and more [Option+S]

**Route 53**

Route 53 > Dashboard

## Route 53 Dashboard Info

**DNS management**

1 Hosted zone

**Traffic management**

A visual tool that lets you easily create policies for multiple endpoints in complex configurations.

**Create policy**

**Availability monitoring**

Health checks monitor your applications and web resources, and direct DNS queries to healthy resources.

**Create health check**

**Domain registration**

1 Domain

**Readiness check**

0 Readiness checks

**Routing control**

0 Control panels

**Register domain**

Find and register an available domain, or [transfer your existing domains](#) to Route 53.

Enter a domain name

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us-east-1.console.aws.amazon.com/route53/v2/hostedzones#

Wells Fargo - Res... Android Quirkr CatchMe COVID-19 testing... Rally GitHub Account Home | T... CAS - VCE Vision... Lab WIKI Other Bookmarks Global Lovy Gupta

aws Services Search for services, features, blogs, docs, and more [Option+S]

**Route 53**

Route 53 > Hosted zones

## Hosted zones (1)

Automatic mode is the current search behavior optimized for best filter results. [To change modes go to settings](#).

**Create hosted zone**

Domain name	Type	Created by	Record count	Description	Hosted zone ID
eternalstore.link	Public	Route 53	7	HostedZone c...	Z00266901WONS...

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**ELB** : Our frontend is using Elastic Load Balancer to distributed load across multiple EC2 servers to handle traffic properly.

**Lambda**: Backend of EternalStore is implemented as REST API by using serverless - AWS Lambda.

AWS Lambda Functions - awscodestar-eternalstore-b-lambda-HelloWorld

This function belongs to an application. Click here to manage it.

**Function overview**

**Code** | Test | Monitor | Configuration | Aliases | Versions

**Description**  
-

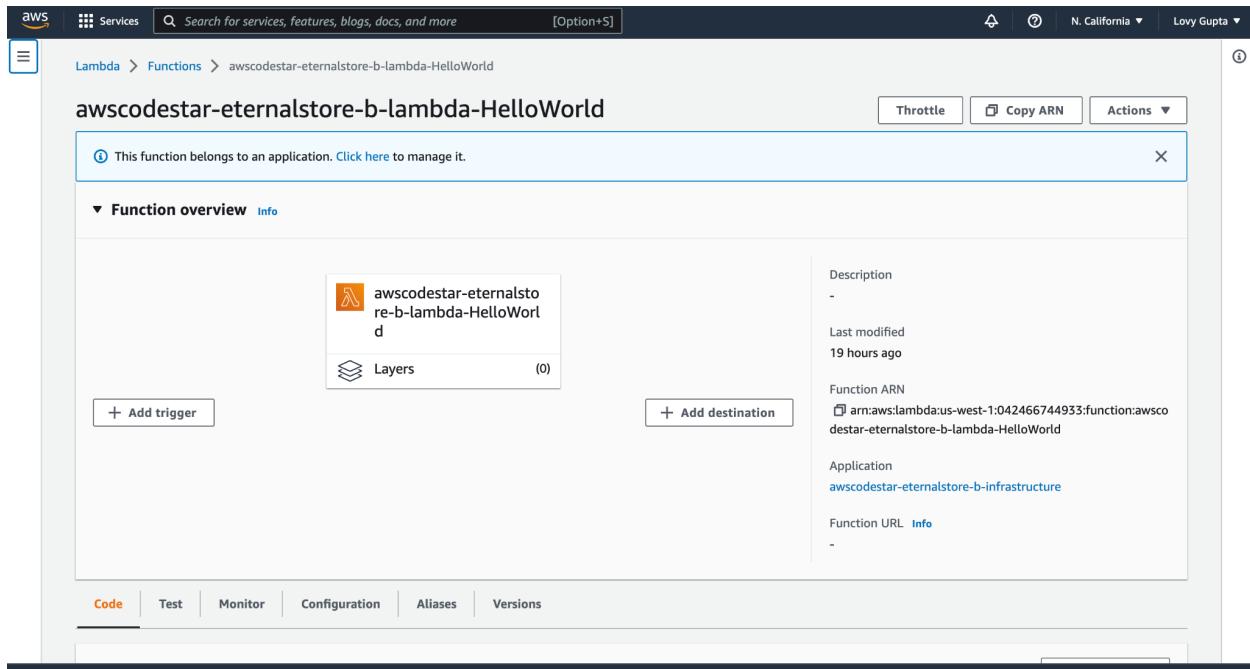
**Last modified**  
19 hours ago

**Function ARN**  
`arn:aws:lambda:us-west-1:042466744933:function:awscodestar-eternalstore-b-lambda-HelloWorld`

**Application**  
`awscodestar-eternalstore-b-infrastructure`

**Function URL** [Info](#)  
-

**Add trigger** | **Add destination**



AWS Lambda Applications - awscodestar-eternalstore-b-infrastructure

**Deployments** | Monitoring

**SAM template** | CloudFormation stack

**Deployment history**

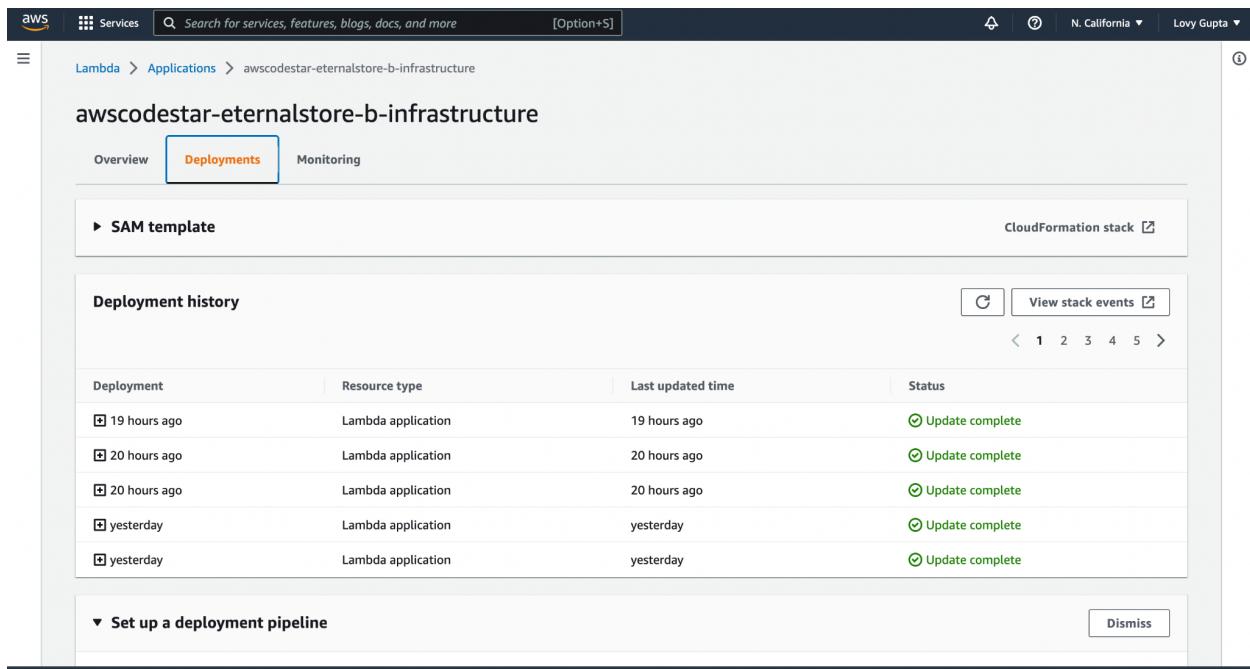
View stack events

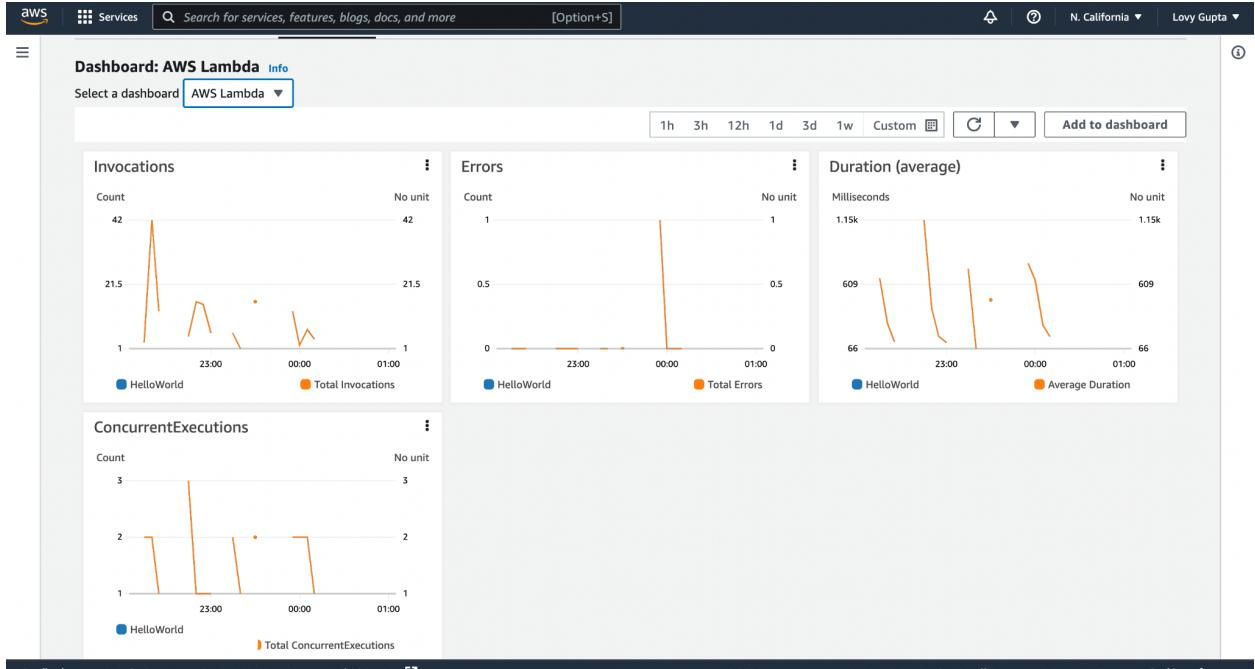
CloudFormation stack

Deployment	Resource type	Last updated time	Status
19 hours ago	Lambda application	19 hours ago	Update complete
20 hours ago	Lambda application	20 hours ago	Update complete
20 hours ago	Lambda application	20 hours ago	Update complete
yesterday	Lambda application	yesterday	Update complete
yesterday	Lambda application	yesterday	Update complete

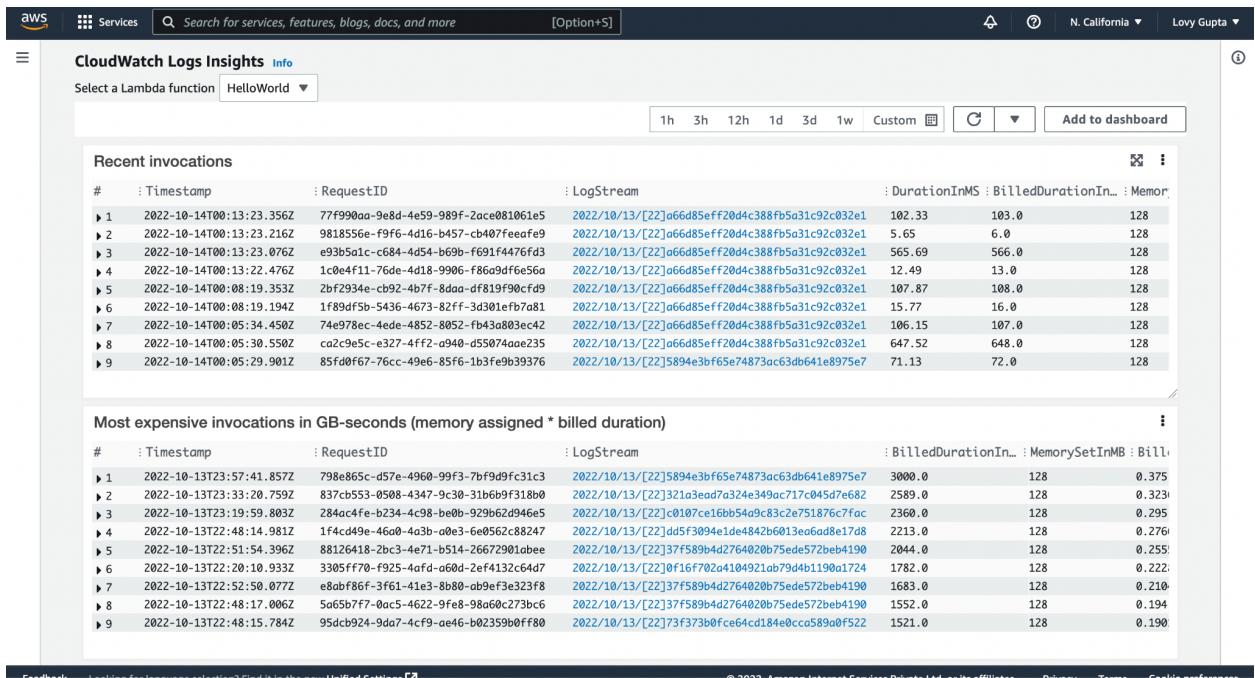
**Set up a deployment pipeline**

Dismiss





**CloudWatch:** The logs generated by our backends are accessible through CloudWatch.



**S3 Cross Region Replication:** It is used as a Disaster recovery measures for users' files stored in S3.

**Replication rules** Info

Replication enables automatic and asynchronous copying of objects across buckets in the same or different AWS Regions. A replication configuration is a set of rules that define what options should be applied to a group of objects during replication.

**Replication configuration settings**

Configuration settings affect all replication rules in the bucket.

**Source bucket:** cf-simple-s3-origin-cloudfrontfors3-042466744933

**IAM role:** s3cr\_role\_for\_cf-simple-s3-origin-cloudfrontfors3-042466744933

**Source Region:** US East (N. Virginia) us-east-1

**Replication rules (1)**

Use replication rules to define options you want Amazon S3 to apply during replication such as server-side encryption, replica ownership, transitioning replicas to another storage class, and more. [Learn more](#)

Actions	Create replication rule
<a href="#">View details</a>	<a href="#">Edit rule</a>
<a href="#">Delete</a>	

Replication rule name	Status	Destination bucket	Destination Region	Priority	Scope	Storage class	Replica owner
eternalreplication_rule	Enabled	s3://eternalstorereplica	US East (N. Virginia) us-east-1	0	Entire bucket	Same as source	Same as source

**Multi AZ Replication :** Amazon RDS is configured with MultiAZ yes which means RDS is able to replicate multi AZ.

Instance			
Configuration	Instance class	Storage	Performance Insights
DB instance ID: eternalstore-db	Instance class: db.t3.micro	Encryption: Enabled	Performance Insights enabled Turned off
Engine version: 8.0.28	vCPU: 2	AWS KMS key: aws/rds	Published logs CloudWatch Logs Error
DB name: -	RAM: 1 GB	Storage type: General Purpose SSD (gp2)	Database activity stream Status: Stopped
License model: General Public License	Availability	Storage: 20 GB	
Option groups: default:mysql-8-0 <small>In sync</small>	Master username: eternaladmin	Provisioned IOPS: -	
Amazon Resource Name (ARN): arn:aws:rds:us-west-1:042466744933:db:eternalstore-db	IAM DB authentication: Not enabled	Storage autoscaling: Disabled	
Resource ID: db-ZYGDVXG5AMWOHFJMV7TEMQBYI4	Multi-AZ: Yes		
Created time: October 11, 2022, 18:21 (UTC-07:00)	Secondary Zone: us-west-1b		

## Auto Scaling Group

The screenshot shows the AWS CloudWatch Metrics console. A banner at the top states: "Predictive scaling policy now supports custom metrics, which also allows you to retain metrics across Blue/Green deployments." Below this, the "Auto Scaling groups" section is displayed. A table lists one Auto Scaling group named "awseb-e-bwjp4v7t9j-stack-AWSEBAutoScalingLaunchConfiguration-8JZwkTomP3SW". The table includes columns for Name, Launch template/configuration, Instances, and Status. The status is shown as "1" and "-". At the bottom of the page, it says "0 Auto Scaling groups selected".

**Code Star :** EC2 based frontend and lambda based backend is hosted using Code star.

The screenshot shows the AWS CodeStar console. On the left, a sidebar has sections for "Developer Tools" and "CodeStar". Under "CodeStar", there are links for "Getting started" and "Projects". The main area is titled "Projects" and shows two projects: "EternalStoreFrontend" and "eternalstore-backend". Each project card has links for "Quick Links", "Repository", "Pipeline", and "Team". Both projects were created "1 day ago".

**CI/CD :** Both frontend and backend services have build and deploy pipeline by using CodeBuild and CodeDeploy.

Developer Tools X

**CodeStar**

Getting started  
Projects  
**Project**  
Team  
Settings

Q Go to resource  
Feedback

CodeStar > Projects > eternalstore-b > Pipeline

## eternalstore-backend

Overview IDE Repository **Pipeline** Monitoring Issues

**Pipeline details** Info

Edit View history Release change

Pipeline Status  
eternalstore-b-Pipeline Deploy: ExecuteChangeSet using CloudFormation Succeeded  
20 hours ago

**Source**

ApplicationSource GitHub (Version 2) Succeeded - 20 hours ago dba5c018

**Build**

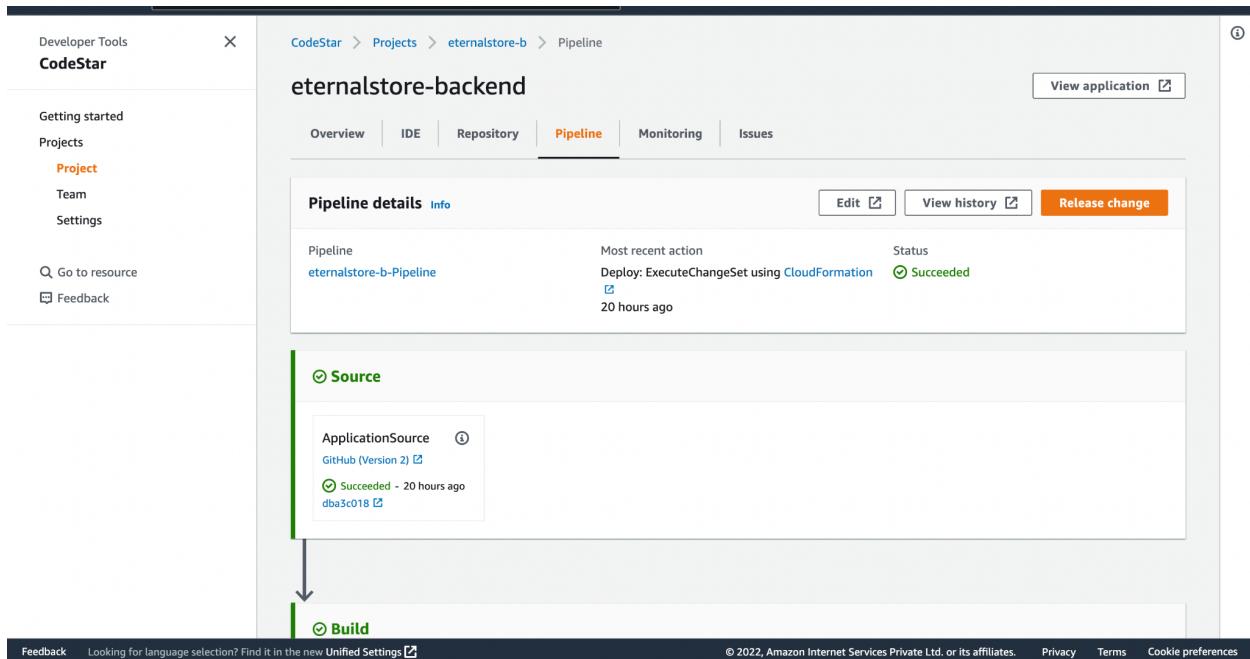
PackageExport AWS CodeBuild Succeeded - 20 hours ago Details

**Deploy**

GenerateChangeSet AWS CloudFormation Succeeded - 20 hours ago Details

ExecuteChangeSet AWS CloudFormation Succeeded - 20 hours ago Details

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Developer Tools X

**CodeStar**

Getting started  
Projects  
**Project**  
Team  
Settings

Q Go to resource  
Feedback

CodeStar > Projects > eternalstore-b > Pipeline

## eternalstore-backend

Overview IDE Repository **Pipeline** Monitoring Issues

**Pipeline details** Info

Edit View history Release change

Pipeline Status  
eternalstore-b-Pipeline Deploy: ExecuteChangeSet using CloudFormation Succeeded  
20 hours ago

**Source**

ApplicationSource GitHub (Version 2) Succeeded - 20 hours ago dba5c018

**Build**

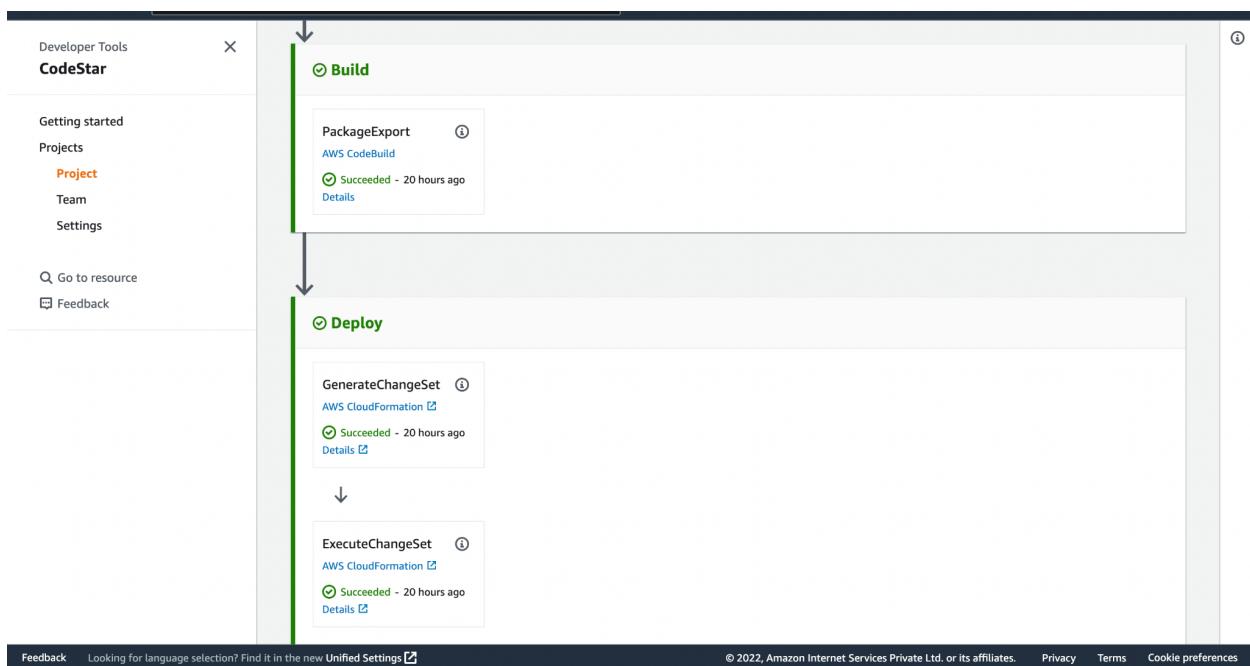
PackageExport AWS CodeBuild Succeeded - 20 hours ago Details

**Deploy**

GenerateChangeSet AWS CloudFormation Succeeded - 20 hours ago Details

ExecuteChangeSet AWS CloudFormation Succeeded - 20 hours ago Details

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Developer Tools X

**CodeStar**

- Getting started
- Projects
- Project**
- Team
- Settings

Q Go to resource ✉ Feedback

CodeStar > Projects > **eternalstore-f** > Pipeline

## EternalStoreFrontend

View application (i)

Overview IDE Repository **Pipeline** Monitoring Issues

**Pipeline details** Info Edit View history Release change

Pipeline	Most recent action	Status
<a href="#">eternalstore-f-Pipeline</a>	Deploy: ExecuteChangeSet using <a href="#">CloudFormation</a>	<span style="color: green;">(i) Succeeded</span>
	<span style="font-size: small;">(i)</span>	<span style="font-size: small;">19 hours ago</span>

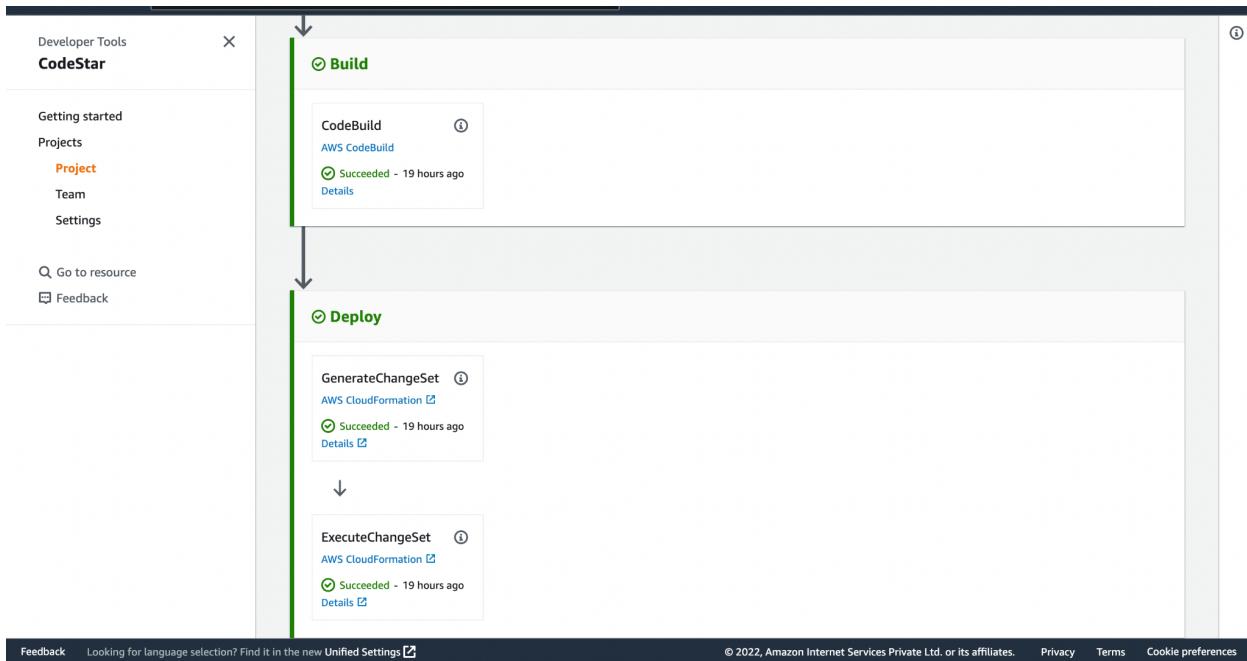
**Source**

ApplicationSource (i)  
[GitHub \(Version 2\)](#) (i)  
(i) Succeeded - 19 hours ago [3849c96f](#) (i)

**Build**

Feedback Looking for language selection? Find it in the new [Unified Settings](#) (i)

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Github <https://github.com/Priygupt13/eternalstore-backend>

The GitHub repository page for `Priygupt13/eternalstore-backend` is shown. The repository is public and contains 57 commits across 2 branches and 0 tags. The commit history is as follows:

- Priygupt13 Merge pull request #24 from Priygupt13/dev ... (21 hours ago)
- backend: A file edit should update S3 (21 hours ago)
- tests: Fix UTs (2 days ago)
- .gitignore: Try working of env variables (2 days ago)
- README.md: Initial commit made by AWS during repository creation. (2 days ago)
- app.js: Fix UTs (2 days ago)
- buildspec.yml: Initial commit made by AWS during repository creation. (2 days ago)
- index.js: Initial commit made by AWS during repository creation. (2 days ago)
- package-lock.json: install aws-sdk to access S3 (22 hours ago)
- package.json: install aws-sdk to access S3 (22 hours ago)
- template-configuration.json: Initial commit made by AWS during repository creation. (2 days ago)
- template.yml: Add policy to access S3 (22 hours ago)
- README.md (22 hours ago)

**About:** Host code for the backend of eternalstore

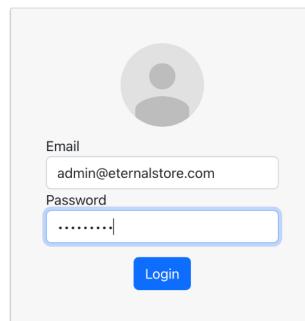
**Releases:** No releases published. [Create a new release](#)

**Packages:** No packages published. [Publish your first package](#)

**Languages:** JavaScript 100.0%

**Admin Panel** For implementing admin panel, admin privilege is given to a user based on role which is done by creating a table “rolebased” in RDS. The purpose of admin panel to monitor and view all activities of users.

Sign in to continue to EternalStore!



A placeholder image for a login form. It features a large gray circular icon with a smaller gray circle inside, representing a user profile. Below the icon are two input fields: one labeled "Email" containing "admin@eternalstore.com" and another labeled "Password" containing ".....". A blue "Login" button is at the bottom.

## Admin Board!

### Files

Name	Owner	Last Modified			
notes.txt	Priya Gupta	10/14/2022, 12:05:29 AM			
tree.png	Priya Gupta	10/13/2022, 11:33:47 PM			
index.html	Priya Gupta	10/13/2022, 11:33:37 PM			

**Source Code :**

GitHub Repo Name : eternalstore-backend, EternalStoreFrontend

Github Username : Priygupt13

Github URL : <https://github.com/Priygupt13/eternalstore-backend>,

<https://github.com/Priygupt13/EternalStoreFrontend>

Video Link : <https://youtu.be/HSq6O8GrfAY>