

# CMPE-281 Cloud Project 1

Using a wide range of AWS services, I developed the full stack project known as Sanketh Cloud or Dropbox Clone, which has functionalities like users signing up, logging in, uploading, and removing files. I used an S3 bucket to store the files, and the AWS DynamoDB is used to store and retrieve user data. The admin role is also created to track all the user data, and the administrator has the authority to upload, update, and remove files.

Backend- Node.js

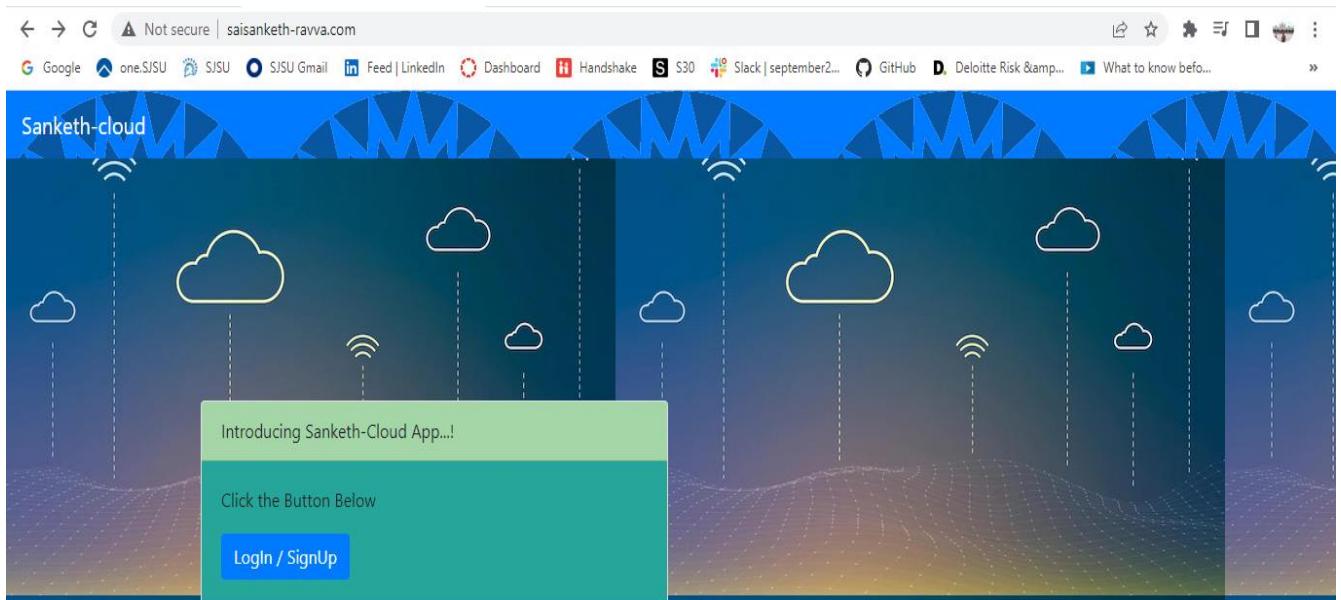
Frontend- React

File Storage System- AWS S3 bucket

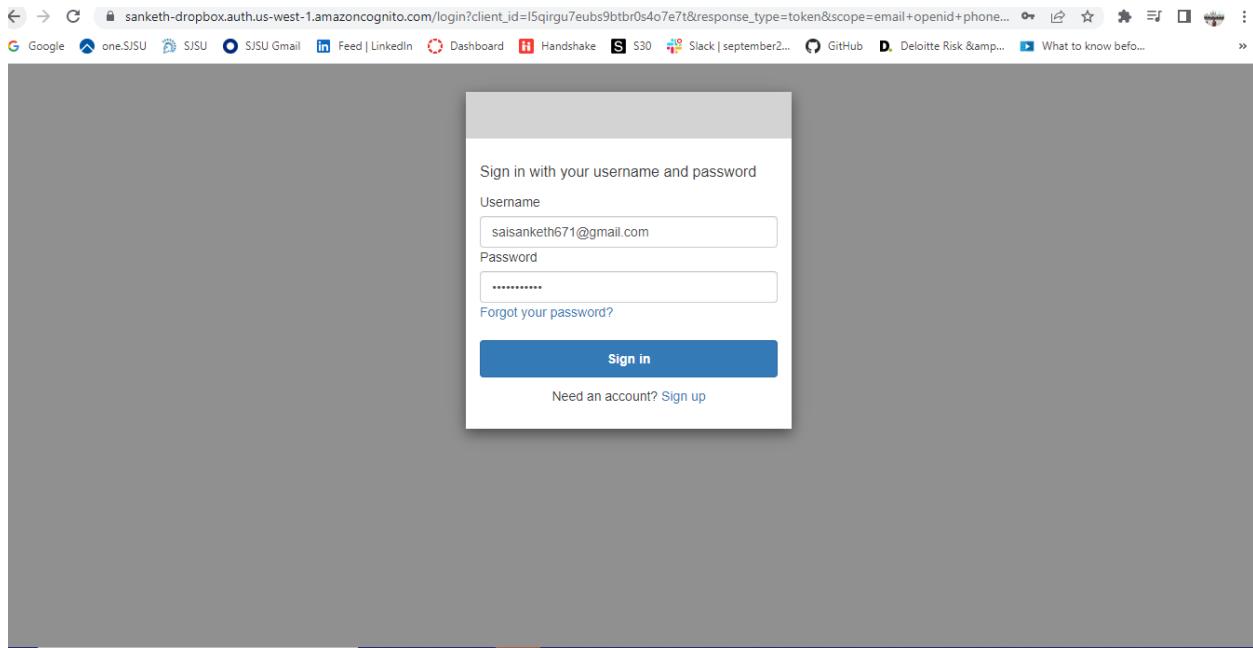
User authentication - AWS Cognito

Database storage- AWS DynamoDB

## 1 ) Login/Sign up page of the application

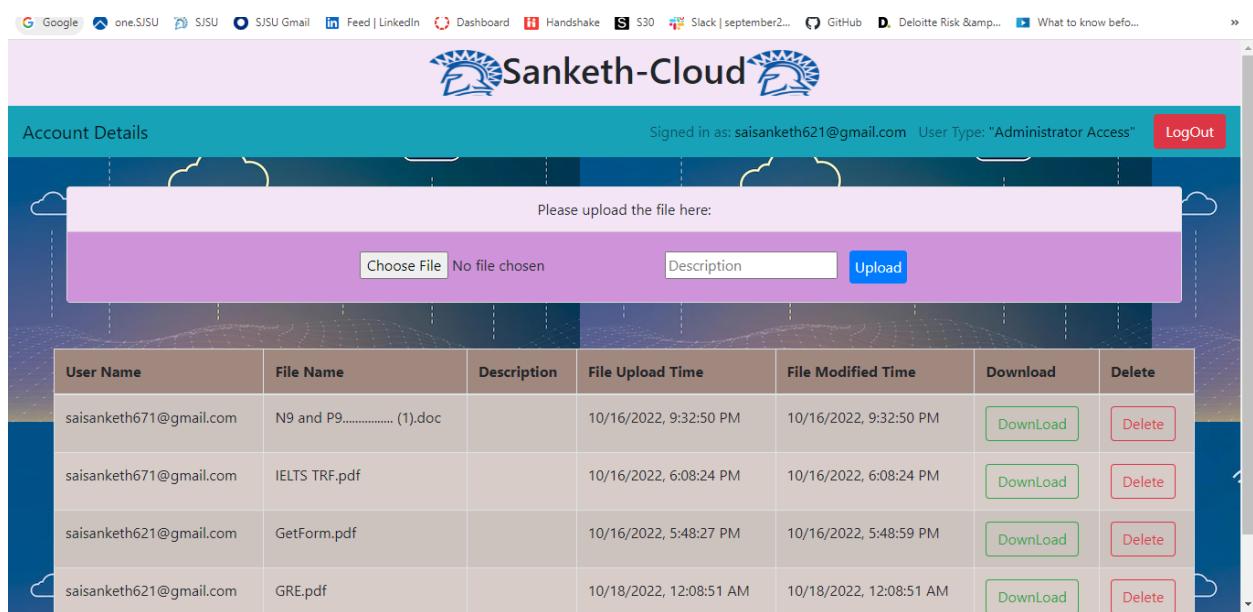


2) If you click on Login/Signup it will redirect to AWS Cognito



3) After Authentication it will redirect to user page

a) administrator access user



User Name	File Name	Description	File Upload Time	File Modified Time	Download	Delete
saisanketh671@gmail.com	N9 and P9.....(1).doc		10/16/2022, 9:32:50 PM	10/16/2022, 9:32:50 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh671@gmail.com	IELTS TRF.pdf		10/16/2022, 6:08:24 PM	10/16/2022, 6:08:24 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GetForm.pdf		10/16/2022, 5:48:27 PM	10/16/2022, 5:48:59 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GRE.pdf		10/18/2022, 12:08:51 AM	10/18/2022, 12:08:51 AM	<button>DownLoad</button>	<button>Delete</button>

b) normal user

The screenshot shows the Sanketh-Cloud application interface. At the top, there is a logo and the text "Sanketh-Cloud". Below it, a teal header bar displays "Account Details", the user's email "saisanketh671@gmail.com", "User Type: 'User'", and a "LogOut" button. A central message box says "Please upload the file here: File Uploaded successfully". Below this, there is a form with fields "Choose File" (containing "No file chosen"), "Description" (empty), and a blue "Upload" button. A table lists uploaded files with columns: File Name, Description, File Upload Time, File Modified Time, Download, and Delete. The table contains three rows:

File Name	Description	File Upload Time	File Modified Time	Download	Delete
IELTS Registration Acknowledgement.pdf		10/18/2022, 8:12:00 PM	10/18/2022, 8:12:00 PM	DownLoad	Delete
1567686279phpf4T0Hq.pdf		10/18/2022, 8:22:44 PM	10/18/2022, 8:22:58 PM	DownLoad	Delete
N9 and P9..... (1).doc		10/16/2022, 9:32:50 PM	10/16/2022, 9:32:50 PM	DownLoad	Delete

#### 4)Uploading Evaluation\_Format file

The screenshot shows the Sanketh-Cloud application interface with a file selection dialog open. The dialog is titled "Open" and shows a list of files in the "personal > application" folder. The "Desktop" option is selected in the left sidebar. The file list includes:

Name	Date modified	Type
1567686279phpf4T0Hq	12/3/2019 11:42 PM	Adobe Acrobat PDF
adhar	9/17/2020 2:19 PM	JPG File
adhar-min	9/17/2020 2:21 PM	JPG File
APP RES	11/8/2019 9:56 AM	Microsoft Word Document
APPLICATION RESUME FOR	11/2/2019 2:38 PM	Microsoft Word Document
CAT APPLICATION	9/12/2019 7:23 PM	Adobe Acrobat PDF
ConfirmationPage_201510031691	10/23/2019 8:59 PM	Adobe Acrobat PDF
DT20184364482_OL	3/23/2020 1:48 PM	Adobe Acrobat PDF
Evaluation_Format	8/5/2019 10:54 PM	Microsoft Word Document
IELTS Registration Acknowledgement	9/2/2021 7:44 PM	Adobe Acrobat PDF
img_1	8/29/2020 5:02 PM	JPG File
new resume	8/29/2020 5:12 PM	Microsoft Word Document

The "File name:" dropdown is set to "Evaluation\_Format". There are "Open" and "Cancel" buttons at the bottom right of the dialog.

a) uploaded file Evaluation\_Format shown in user account

The screenshot shows the Sanketh-Cloud user account interface. At the top, there is a logo with two blue horse heads flanking the text "Sanketh-Cloud". Below the logo, the header bar is teal with the text "Account Details" on the left and "Signed in as: saisanketh671@gmail.com User Type: "User"" on the right, along with a red "Logout" button. A central message box displays "Please upload the file here: File Uploaded successfully". Below this, there is a form with fields for "Choose File" (containing "Evaluation\_Format.doc"), "Description" (empty), and a blue "Upload" button. The main content area is a table listing uploaded files:

File Name	Description	File Upload Time	File Modified Time	Download	Delete
IELTS Registration Acknowledgement.pdf		10/18/2022, 8:12:00 PM	10/18/2022, 8:12:00 PM	<button>DownLoad</button>	<button>Delete</button>
Evaluation_Format.doc		10/18/2022, 9:06:06 PM	10/18/2022, 9:06:06 PM	<button>DownLoad</button>	<button>Delete</button>
1567686279phpf4T0Hq.pdf		10/18/2022, 8:22:44 PM	10/18/2022, 8:22:58 PM	<button>DownLoad</button>	<button>Delete</button>

b) reflection of uploaded file Evaluation\_Format from user account shown in admin account

The screenshot shows the Sanketh-Cloud admin account interface. The header bar is identical to the user account, with the teal "Account Details" bar, the user info "Signed in as: saisanketh671@gmail.com User Type: "Administrator Access"" on the right, and a red "Logout" button. A central message box displays "Please upload the file here:". Below this, there is a form with fields for "Choose File" (containing "No file chosen"), "Description" (empty), and a blue "Upload" button. The main content area is a table listing uploaded files by user:

User Name	File Name	Description	File Upload Time	File Modified Time	Download	Delete
saisanketh671@gmail.com	IELTS Registration Acknowledgement.pdf		10/18/2022, 8:12:00 PM	10/18/2022, 8:12:00 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh671@gmail.com	Evaluation_Format.doc		10/18/2022, 9:06:06 PM	10/18/2022, 9:06:06 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh671@gmail.com	1567686279phpf4T0Hq.pdf		10/18/2022, 8:22:44 PM	10/18/2022, 8:22:58 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GetForm.pdf		10/16/2022, 5:48:27 PM	10/16/2022, 5:48:59 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GRE.pdf		10/18/2022, 12:08:51 AM	10/18/2022, 12:08:51 AM	<button>DownLoad</button>	<button>Delete</button>

## 5) Uploaded file Evaluation\_Format is updated into S3 bucket

The screenshot shows the AWS S3 console interface. On the left, there's a sidebar with various service links like Access Points, Object Lambda Access Points, Multi-Region Access Points, Batch Operations, and Access analyzer for S3. Below that is a section for Block Public Access settings. Under 'Storage Lens', there are links for Dashboards and AWS Organizations settings. At the bottom of the sidebar, it says 'Feature spotlight'. The main area is titled 'Objects (6)' and contains a table with the following data:

Name	Type	Last modified	Size	Storage class
1567686279phpf4T0Hq.pdf	pdf	October 18, 2022, 20:22:54 (UTC-07:00)	3.1 MB	Standard
Evaluation_Format.doc	doc	October 18, 2022, 21:06:06 (UTC-07:00)	63.5 KB	Standard
GetForm.pdf	pdf	October 16, 2022, 17:48:57 (UTC-07:00)	7.1 MB	Standard
GRE.pdf	pdf	October 18, 2022, 00:08:52 (UTC-07:00)	572.6 KB	Standard

## 6) Uploaded file Evaluation\_Format is updated in Dynamo DB database

The screenshot shows the AWS DynamoDB console. On the left, there's a sidebar with links for Dashboard, Tables, Update settings, Explore items (which is highlighted in orange), PartiQL editor, Backups, Exports to S3, Imports from S3, Reserved capacity, Settings, and DAX. The main area is titled 'Completed Read capacity units consumed: 0.5' and shows a table titled 'Items returned (5)'. The table has the following data:

userId	description	fileCreatedTime	fileName	fileUpdatedTime
saisanketh671@gmail...	<empty>	Tue Oct 18 2022 2...	IELTS Regis...	Tue Oct 18 2022 2...
saisanketh671@gmail...	<empty>	Tue Oct 18 2022 2...	Evaluation_...	Tue Oct 18 2022 2...
saisanketh671@gmail...	<empty>	Tue Oct 18 2022 2...	156768627...	Tue Oct 18 2022 2...
saisanketh621@gmail...	<empty>	Sun Oct 16 2022 1...	GetForm.pdf	Sun Oct 16 2022 1...
saisanketh621@gmail...	<empty>	Tue Oct 18 2022 0...	GRE.pdf	Tue Oct 18 2022 0...

## 7) Downloading the uploaded file Evaluation\_Format in User account

The screenshot shows the Sanketh-Cloud user account interface. At the top, there is a header with the logo "Sanketh-Cloud" and a sign-in message "Signed in as: saisanketh671@gmail.com User Type: "User"" along with a "LogOut" button. Below the header is a form for file upload with fields for "Choose File" (containing "No file chosen"), "Description", and a blue "Upload" button. A table lists three uploaded files:

File Name	Description	File Upload Time	File Modified Time	Download	Delete
IELTS Registration Acknowledgement.pdf		10/18/2022, 8:12:00 PM	10/18/2022, 8:12:00 PM	<button>DownLoad</button>	<button>Delete</button>
Evaluation_Format.doc		10/18/2022, 9:06:06 PM	10/18/2022, 9:06:06 PM	<button>DownLoad</button>	<button>Delete</button>
1567686279phpf4T0Hq.pdf		10/18/2022, 8:22:44 PM	10/18/2022, 8:22:58 PM	<button>DownLoad</button>	<button>Delete</button>



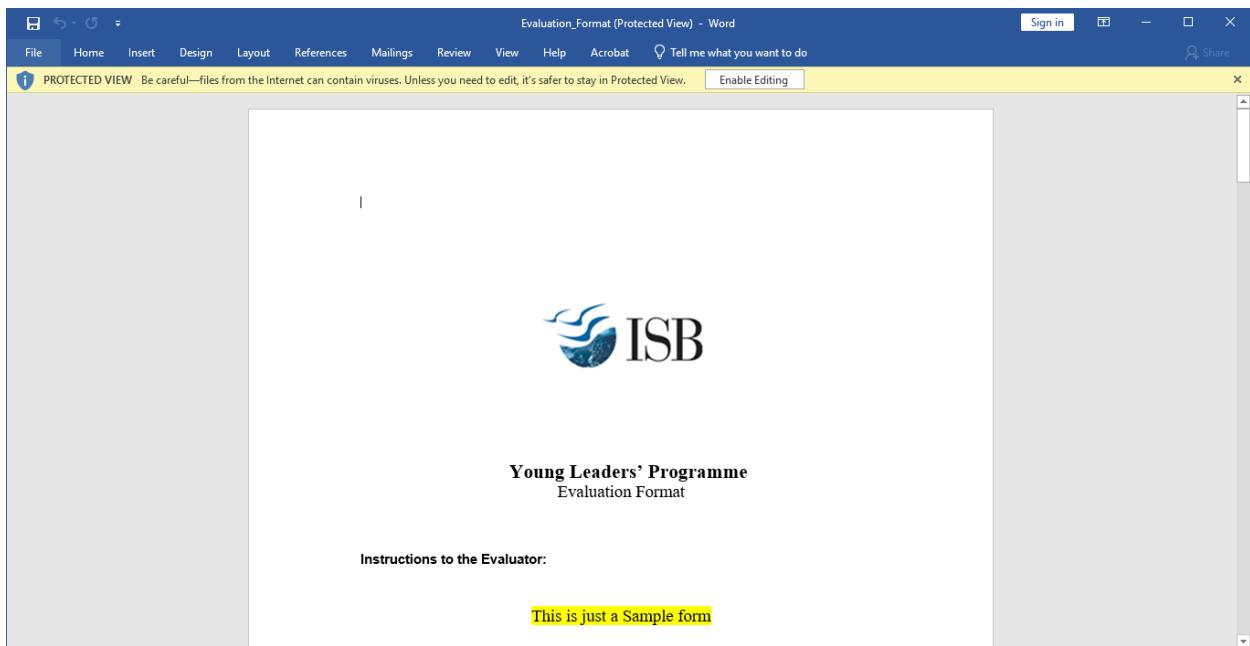
## b) Downloading the uploaded file Evaluation\_Format in Admin account

The screenshot shows the Sanketh-Cloud admin account interface. The header is identical to the user account, with the sign-in message "Signed in as: saisanketh621@gmail.com User Type: "Administrator Access"" and a "LogOut" button. Below the header is a form for file upload with fields for "Choose File" (containing "No file chosen"), "Description", and a blue "Upload" button. A table lists five uploaded files:

User Name	File Name	Description	File Upload Time	File Modified Time	Download	Delete
saisanketh671@gmail.com	IELTS Registration Acknowledgement.pdf		10/18/2022, 8:12:00 PM	10/18/2022, 8:12:00 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh671@gmail.com	Evaluation_Format.doc		10/18/2022, 9:06:06 PM	10/18/2022, 9:06:06 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh671@gmail.com	1567686279phpf4T0Hq.pdf		10/18/2022, 8:22:44 PM	10/18/2022, 8:22:58 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GetForm.pdf		10/16/2022, 5:48:27 PM	10/16/2022, 5:48:59 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GRE.pdf		10/18/2022, 12:08:51 AM	10/18/2022, 12:08:51 AM	<button>DownLoad</button>	<button>Delete</button>



8) Opening the downloaded file “Evaluation\_Format”



9) Deleting the uploaded file “Evaluation\_Format” from user account.

The screenshot shows the Sanketh-Cloud web application. At the top, there is a header with the logo "Sanketh-Cloud" and a "Logout" button. The "Account Details" section shows the user is signed in as "saisanketh671@gmail.com" with a "User Type: "User"" status. Below this, a file upload form has a placeholder "Please upload the file here:" and fields for "Choose File" (with "No file chosen"), "Description", and "Upload". A table lists uploaded files with columns: File Name, Description, File Upload Time, File Modified Time, Download, and Delete. The table contains two rows:

File Name	Description	File Upload Time	File Modified Time	Download	Delete
IELTS Registration Acknowledgement.pdf		10/18/2022, 8:12:00 PM	10/18/2022, 8:12:00 PM	<button>DownLoad</button>	<button>Delete</button>
1567686279phpf4T0Hq.pdf		10/18/2022, 8:22:44 PM	10/18/2022, 8:22:58 PM	<button>DownLoad</button>	<button>Delete</button>

10) The changes are reflected in admin account (no “Evaluation\_Format” file)

The screenshot shows a web application titled "Sanketh-Cloud". At the top, there's a header bar with "Account Details", the user's email "saisanketh621@gmail.com", "User Type: Administrator Access", and a "Logout" button. Below the header is a form with a placeholder "Please upload the file here:" and buttons for "Choose File", "Description", and "Upload". A pink banner below the form displays the message "No file chosen". The main content area is a table listing uploaded files:

User Name	File Name	Description	File Upload Time	File Modified Time	Download	Delete
saisanketh621@gmail.com	IELTS Registration Acknowledgement.pdf		10/18/2022, 8:12:00 PM	10/18/2022, 8:12:00 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	1567686279phpf4TOHq.pdf		10/18/2022, 8:22:44 PM	10/18/2022, 8:22:58 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GetForm.pdf		10/16/2022, 5:48:27 PM	10/16/2022, 5:48:59 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GRE.pdf		10/18/2022, 12:08:51 AM	10/18/2022, 12:08:51 AM	<button>DownLoad</button>	<button>Delete</button>

11) The changes are reflected in S3 bucket (no “Evaluation\_Format” file)

The screenshot shows the AWS S3 "Objects" page. The left sidebar includes "Amazon S3", "Buckets", "Storage Lens", and "Feature spotlight". The main area shows a list of objects with a total of 5 items:

Name	Type	Last modified	Size	Storage class
1567686279phpf4TOHq.pdf	pdf	October 18, 2022, 20:22:54 (UTC-07:00)	3.1 MB	Standard
GetForm.pdf	pdf	October 16, 2022, 17:48:57 (UTC-07:00)	7.1 MB	Standard
GRE.pdf	pdf	October 18, 2022, 00:08:52 (UTC-07:00)	572.6 KB	Standard
IELTS Registration Acknowledgement.pdf	pdf	October 18, 2022, 20:12:01 (UTC-07:00)	222.2 KB	Standard
S.P.JAIN app.docx	docx	October 18, 2022, 19:56:21 (UTC-07:00)	22.7 KB	Standard

## b)changes reflected in Dynamo DB

The screenshot shows the AWS DynamoDB console. On the left, there's a sidebar with options like Dashboard, Tables, Update settings, Explore items, PartiQL editor, Backups, Exports to S3, Imports from S3, Reserved capacity, Settings, DAX, Clusters, and Subnet groups. The main area is titled "Scan/Query items" with a sub-section "Completed" indicating "Read capacity units consumed: 0.5". It shows a table titled "Items returned (4)" with columns: checkbox, userId, description, fileCreatedTime, fileName, and fileUpdatedTime. The data in the table is as follows:

	userId	description	fileCreatedTime	fileName	fileUpdatedTime
<input type="checkbox"/>	saisanketh671@gmail...	<empty>	Tue Oct 18 2022 2...	IELTS Regis...	Tue Oct 18 2022 2...
<input type="checkbox"/>	saisanketh621@gmail...	<empty>	Tue Oct 18 2022 2...	S.P.JAIN ap...	Tue Oct 18 2022 2...
<input type="checkbox"/>	saisanketh621@gmail...	<empty>	Sun Oct 16 2022 1...	GetForm.pdf	Sun Oct 16 2022 1...
<input type="checkbox"/>	saisanketh621@gmail...	<empty>	Tue Oct 18 2022 0...	GRE.pdf	Tue Oct 18 2022 0...

## 12) Uploading file “CAT APPLICATION” from admin account

The screenshot shows a file upload dialog box. At the top, it says "Choose File" and "No file chosen". Below that is a table with columns "User Name" and "File Name". The data in the table is:

User Name	File Name
saisanketh671@gmail.com	IELTS Registration Acknowledgement.pdf
saisanketh671@gmail.com	1567686279phpf4T0Hq.pdf
saisanketh621@gmail.com	GetForm.pdf
saisanketh621@gmail.com	GRE.pdf

Below the table is a file explorer window titled "personal > application". It shows a list of files and folders. The file "CAT APPLICATION" is highlighted. The file details are as follows:

Name	Date modified	Type
CAT APPLICATION	9/12/2019 7:23 PM	Adobe Acrobat

At the bottom of the dialog box, there are buttons for "File name: CAT APPLICATION", "All Files", "Open", and "Cancel".

The screenshot shows the Sanketh-Cloud application interface. At the top, there's a logo and the text "Sanketh-Cloud". Below it, a teal bar displays "Account Details", the user signed in as "saisanketh621@gmail.com", "User Type: Administrator Access", and a "Logout" button. A message box in the center says "Please upload the file here: File Uploaded successfully". Below this is a form with fields "Choose File" (containing "CAT APPLICATION.pdf"), "Description" (empty), and a "Upload" button. A table below lists uploaded files with columns: User Name, File Name, Description, File Upload Time, File Modified Time, Download, and Delete.

User Name	File Name	Description	File Upload Time	File Modified Time	Download	Delete
saisanketh621@gmail.com	IELTS Registration Acknowledgement.pdf		10/18/2022, 8:12:00 PM	10/18/2022, 8:12:00 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	1567686279phpf4T0Hq.pdf		10/18/2022, 8:22:44 PM	10/18/2022, 8:22:58 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	CAT APPLICATION.pdf		10/18/2022, 9:44:08 PM	10/18/2022, 9:44:11 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GetForm.pdf		10/16/2022, 5:48:27 PM	10/16/2022, 5:48:59 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GRE.pdf		10/18/2022, 12:08:51 AM	10/18/2022, 12:08:51 AM	<button>DownLoad</button>	<button>Delete</button>

13) Uploaded file “CAT APPLICATION” is updates into S3 bucket

The screenshot shows the AWS S3 console. The left sidebar has sections for Buckets, Storage Lens, and Feature spotlight. The main area shows a list of objects in a bucket. The top bar includes buttons for "Create folder" and "Upload", and a search bar. The object list table has columns: Name, Type, Last modified, Size, and Storage class.

Name	Type	Last modified	Size	Storage class
1567686279phpf4T0Hq.pdf	pdf	October 18, 2022, 20:22:54 (UTC-07:00)	3.1 MB	Standard
CAT APPLICATION.pdf	pdf	October 18, 2022, 21:44:09 (UTC-07:00)	1.8 MB	Standard
GetForm.pdf	pdf	October 16, 2022, 17:48:57 (UTC-07:00)	7.1 MB	Standard
GRE.pdf	pdf	October 18, 2022, 00:08:52 (UTC-07:00)	572.6 KB	Standard
IELTS Registration Acknowledgement.pdf	pdf	October 18, 2022, 20:12:01 (UTC-07:00)	222.2 KB	Standard
S.P.JAIN app.docx	docx	October 18, 2022, 19:56:21 (UTC-07:00)	22.7 KB	Standard

14) Uploaded file “CAT APPLICATION” is updates into Dynamo DB

The screenshot shows the AWS DynamoDB console. On the left, there's a sidebar with options like Dashboard, Tables, Update settings, Explore items, PartiQL editor, Backups, Exports to S3, Imports from S3, Reserved capacity, Settings, Clusters, and Subnet groups. The main area shows a table titled 'Items returned (5)'. The table has columns: userId, description, fileCreatedTime, fileName, and fileUpdatedTime. The data includes:

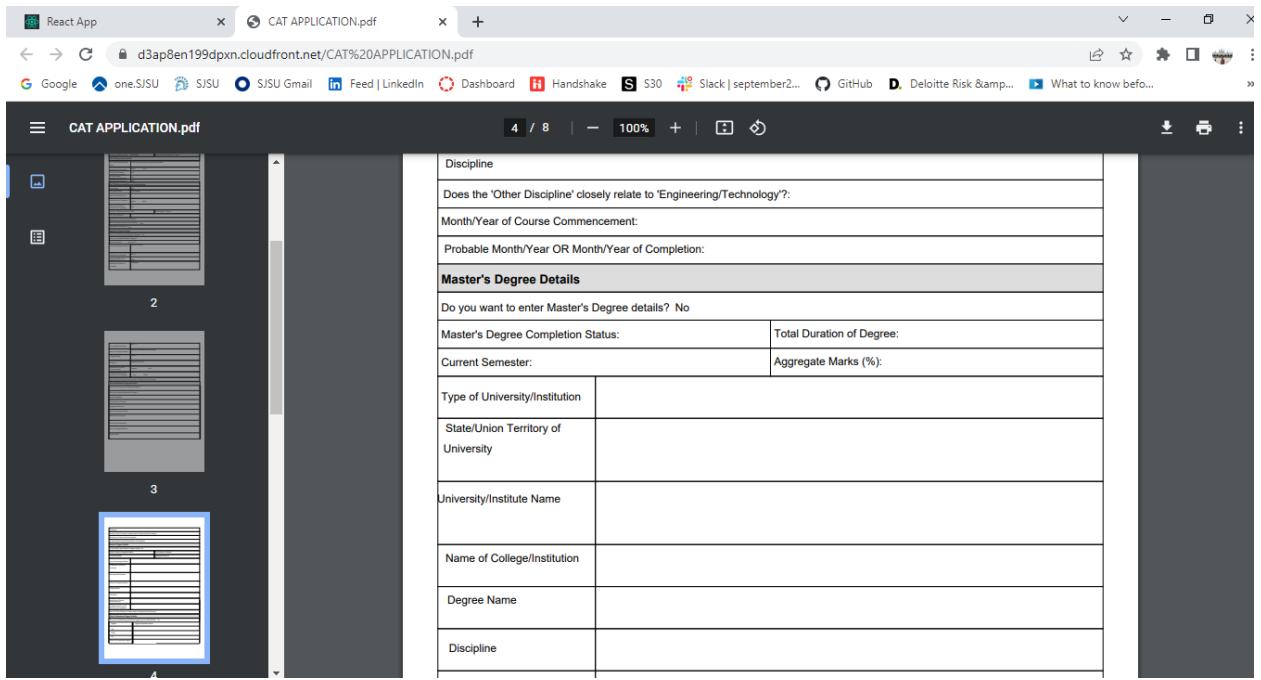
	userId	description	fileCreatedTime	fileName	fileUpdatedTime
1	saisanketh671@gmail.com	<empty>	Tue Oct 18 2022 2...	IELTS Regis...	Tue Oct 18 2022 2...
2	saisanketh671@gmail.com	<empty>	Tue Oct 18 2022 2...	156768627...	Tue Oct 18 2022 2...
3	saisanketh621@gmail.com	<empty>	Tue Oct 18 2022 2...	CAT APPLIC...	Tue Oct 18 2022 2...
4	saisanketh621@gmail.com	<empty>	Sun Oct 16 2022 1...	GetForm.pdf	Sun Oct 16 2022 1...
5	saisanketh621@gmail.com	<empty>	Tue Oct 18 2022 0...	GRE.pdf	Tue Oct 18 2022 0...

15) Downloaded “CAT APPLICATION” file in admin account

The screenshot shows the Sanketh-Cloud application interface. At the top, it says "Sanketh-Cloud". It shows a "Signed in as: saisanketh621@gmail.com User Type: 'Administrator Access'" message and a "LogOut" button. Below this, there's a message box saying "Please upload the file here: File Uploaded successfully". There are input fields for "Choose File" (containing "S.P.JAIN app.docx"), "Description", and a "Upload" button. Below this is a table with columns: User Name, File Name, Description, File Upload Time, File Modified Time, Download, and Delete. The data is:

User Name	File Name	Description	File Upload Time	File Modified Time	Download	Delete
saisanketh671@gmail.com	IELTS Registration Acknowledgement.pdf		10/18/2022, 8:12:00 PM	10/18/2022, 8:12:00 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	S.P.JAIN app.docx		10/18/2022, 9:51:01 PM	10/18/2022, 9:51:01 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	CAT APPLICATION.pdf		10/18/2022, 9:44:08 PM	10/18/2022, 9:44:11 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GetForm.pdf		10/16/2022, 5:48:27 PM	10/16/2022, 5:48:59 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GRE.pdf		10/18/2022, 12:08:51 AM	10/18/2022, 12:08:51 AM	<button>DownLoad</button>	<button>Delete</button>

16) opened “CAT APPLICATION” file



17) Deleted “CAT APPLICATION” file in Admin Account

The screenshot shows the "Sanketh-Cloud" web application interface. At the top, there is a navigation bar with the logo and a "LogOut" button. Below the navigation bar, a message box displays "Please upload the file here: File Uploaded successfully". Below this message, there is a file upload form with fields for "Choose File" (containing "S.P.JAIN app.docx"), "Description", and "Upload". Below the upload form, a table titled "Account Details" lists uploaded files. The table has columns: User Name, File Name, Description, File Upload Time, File Modified Time, Download, and Delete. The data in the table is as follows:

User Name	File Name	Description	File Upload Time	File Modified Time	Download	Delete
saisanketh621@gmail.com	IELTS Registration Acknowledgement.pdf		10/18/2022, 8:12:00 PM	10/18/2022, 8:12:00 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	S.P.JAIN app.docx		10/18/2022, 9:51:01 PM	10/18/2022, 9:51:01 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GetForm.pdf		10/16/2022, 5:48:27 PM	10/16/2022, 5:48:59 PM	<button>DownLoad</button>	<button>Delete</button>
saisanketh621@gmail.com	GRE.pdf		10/18/2022, 12:08:51 AM	10/18/2022, 12:08:51 AM	<button>DownLoad</button>	<button>Delete</button>

18) The changes are reflected in S3 bucket (no “CAT APPLICATION” file)

The screenshot shows the AWS S3 console interface. On the left, there's a sidebar with options like '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', and 'AWS Organizations settings'. The main area has a title bar with 'Replicate your data to any storage class to save on storage costs.' and a 'Get started' button. Below that is a search bar and a toolbar with buttons for 'Copy S3 URI', 'Copy URL', 'Download', 'Open', 'Delete', 'Actions', 'Create folder', and 'Upload'. A table lists four objects: 'GetForm.pdf' (pdf, 7.1 MB, Standard), 'GRE.pdf' (pdf, 572.6 KB, Standard), 'IELTS Registration Acknowledgement.pdf' (pdf, 222.2 KB, Standard), and 'S.P.JAIN app.docx' (docx, 22.7 KB, Standard). The table includes columns for Name, Type, Last modified, Size, and Storage class.

Name	Type	Last modified	Size	Storage class
GetForm.pdf	pdf	October 16, 2022, 17:48:57 (UTC-07:00)	7.1 MB	Standard
GRE.pdf	pdf	October 18, 2022, 00:08:52 (UTC-07:00)	572.6 KB	Standard
IELTS Registration Acknowledgement.pdf	pdf	October 18, 2022, 20:12:01 (UTC-07:00)	222.2 KB	Standard
S.P.JAIN app.docx	docx	October 18, 2022, 21:51:02 (UTC-07:00)	22.7 KB	Standard

19) The changes are reflected in DynamoDB (no “CAT APPLICATION” file)

The screenshot shows the AWS DynamoDB console interface. On the left, there's a sidebar with options like 'Dashboard', 'Tables', 'Update settings', 'Explore items' (which is highlighted in orange), 'PartiQL editor', 'Exports to S3', 'Imports from S3', 'Reserved capacity', and 'Settings'. The main area has a title bar with 'Scan/Query items' and a note 'Completed Read capacity units consumed: 0.5'. Below that is a table titled 'Items returned (4)' with a 'Scan' button, 'Actions' dropdown, and a 'Create item' button. The table includes columns for 'userId', 'description', 'fileCreatedTime', 'fileName', and 'fileUpdatedTime'. The table lists four items: 'saisanketh671@gmail...', 'saisanketh621@gmail...', 'saisanketh621@gmail...', and 'saisanketh621@gmail...'. Each item has an empty 'description' field and specific dates/times for file creation and update.

userId	description	fileCreatedTime	fileName	fileUpdatedTime
saisanketh671@gmail...	<empty>	Tue Oct 18 2022 2...	IELTS Regis...	Tue Oct 18 2022 2...
saisanketh621@gmail...	<empty>	Tue Oct 18 2022 2...	S.P.JAIN ap...	Tue Oct 18 2022 2...
saisanketh621@gmail...	<empty>	Sun Oct 16 2022 1...	GetForm.pdf	Sun Oct 16 2022 1...
saisanketh621@gmail...	<empty>	Tue Oct 18 2022 0...	GRE.pdf	Tue Oct 18 2022 0...

20) The changes are reflected in DynamoDB (no “Evaluation\_Format” file)

The screenshot shows the AWS DynamoDB console. On the left, there's a sidebar with options like Dashboard, Tables, Update settings, Explore items, PartiQL editor, Backups, Exports to S3, Imports from S3, Reserved capacity, Settings, Clusters, and Subnet groups. The main area is titled "Scan/Query items" with a sub-section "Items returned (4)". The table lists four items:

	userId	description	fileCreatedTime	fileName	fileUpdatedTime
<input type="checkbox"/>	saisanketh671@gmail...	<empty>	Tue Oct 18 2022 2...	IELTS Regis...	Tue Oct 18 2022 2...
<input type="checkbox"/>	saisanketh671@gmail...	<empty>	Tue Oct 18 2022 2...	156768627...	Tue Oct 18 2022 2...
<input type="checkbox"/>	saisanketh621@gmail...	<empty>	Sun Oct 16 2022 1...	GetForm.pdf	Sun Oct 16 2022 1...
<input type="checkbox"/>	saisanketh621@gmail...	<empty>	Tue Oct 18 2022 0...	GRE.pdf	Tue Oct 18 2022 0...

21) The records got deleted in S3 and DynamoDB.

The screenshot shows the AWS S3 console for a bucket named "dropboxcloud1". The top navigation bar includes links to Google, WEPI SJISU, one.SISU, Flywire - Powering t..., GitHub - CarlosVini..., Getting Started - R..., LinkedIn, (20) Feed | LinkedIn, (9) WhatsApp, What's the difference..., Problems - LeetCode, Global, and AkhilThaneti. The main area shows the bucket "dropboxcloud1" with the status "Publicly accessible". Below it, there are tabs for Objects, Properties, Permissions, Metrics, Management, and Access Points. The "Objects" tab is selected, showing a table with one row: "No objects". A message below the table says "You don't have any objects in this bucket." There are buttons for Upload, Copy S3 URI, Copy URL, Download, Open, Delete, Actions, and Create folder.

The screenshot shows the AWS DynamoDB console. On the left, the navigation pane includes 'Dashboard', 'Tables', 'Update settings', 'Explore items' (which is highlighted in red), 'PartiQL editor', 'Backups', 'Exports to S3', 'Imports from S3', 'Reserved capacity', and 'Settings'. Under 'DAX', there are 'Clusters', 'Subnet groups', and 'Parameter groups'. The main area shows a table named 'dropbox' with a single row. The row details are as follows:

Scan/Query items
Completed Read capacity units consumed: 0.5
Items returned (0)
<input type="button" value="Actions"/> <input type="button" value="Create item"/>

A message at the bottom states: "The query did not return any results."

## 22) Used Cloudfront to download files in the application to achieve low latency

The screenshot shows the AWS CloudFront console. The navigation pane includes 'Distributions', 'Policies', 'Functions', 'What's new', 'Telemetry' (which is highlighted in red), 'Monitoring', 'Alarms', 'Logs', and 'Reports & analytics'. The main area displays a distribution table with one entry:

Distributions (1) <a href="#">Info</a>
<input type="button" value="Enable"/> <input type="button" value="Disable"/> <input type="button" value="Delete"/> <input type="button" value="Create distribution"/>
<input type="text"/> Search all distributions
ID Description Domain ... Alternat... Origins Status Last mo...
E3RINSCXQ6625U - d3ap8en19... sanketh-dropbox Enabled October 16...

**CloudFront > Distributions > E3RINSCXQ6625U**

**Origins**

Origin name	Origin domain	Origin path	Origin type	Origin shield status	Origin ...
sanketh-dropbox...	sanketh-dropbox.s3.us-west...		S3	-	-

**Origin groups**

**23) Implemented Multi Region Access Point to decrease load on the main region bucket and Improve availability. It also helps in Disaster Recovery**

**Amazon S3 > Multi-Region Access Points > dropboxaccesspoint**

**Properties**

**Multi-Region Access Point overview**

Creation date October 18, 2022, 20:08:26 (UTC-07:00)	Amazon Resource Name (ARN) arn:aws:s3::039185736668:accesspoint/t/m6iib3ajpx8od.mrap	Alias m6iib3ajpx8od.mrap
---	---	-----------------------------

**Buckets (4)**

Requests to this Multi-Region Access Point will be routed to the following buckets. [Learn more](#)

Screenshot of the AWS Cloud Console showing the creation of a Multi-Region Access Point (MRAP) for Amazon S3.

**Amazon S3 MRAP Details:**

- Creation date:** October 18, 2022, 20:08:26 (UTC-07:00)
- Amazon Resource Name (ARN):** arn:aws:s3::039185736668:accesspoint/m6iib3ajpx8od.mrap
- Alias:** m6iib3ajpx8od.mrap

**Buckets (4):**

Bucket name	AWS Regions
dropboxaspsouth	Asia Pacific (Mumbai) ap-south-1
dropboxeast1	US East (N. Virginia) us-east-1
dropboxwest2	US West (Oregon) us-west-2
sanketh-dropbox	US West (N. California) us-west-1

Screenshot of a Windows taskbar showing multiple open browser tabs related to AWS services.

Screenshot of the AWS Cloud Console showing the replication summary for the MRAP created earlier.

**Replication summary:**

This summary was generated based on the replication rules for the buckets used with this Multi-Region Access Point, which are listed in the Replication rules table below.

**Replication Rules:**

- AWS Regions:** US West (Oregon) us-west-2, US East (N. Virginia) us-east-1, Asia Pacific (Mumbai) ap-south-1
- One-way replication:** None
- Two-way replication:** None

Replication rules for bucket "dropboxaspssouth" (3)

Replication rule name	Status	Destination bucket	Destination Region	Priority	Scope	Storage class
Multi-Region Access Point : dropboxwest2	Enabled	s3://dropboxwest2	US West (Oregon) us-west-2	2	Prefix: dropbox access	Same as source
Multi-Region Access Point : sanketh-dropbox	Enabled	s3://sanketh-dropbox	US West (N. California) us-west-1	1	Prefix: dropbox access	Same as source
Multi-Region Access Point : dropboxeast1	Enabled	s3://dropboxeast1	US East (N. Virginia) us-east-1	0	Prefix: dropbox access	Same as source

## 24) Lifecycle rules for S3 bucket to move data to various data storage types.

Replicate your data to any storage class to save on storage costs.

**sanketh-dropbox**

Publicly accessible

Lifecycle rules (1)

Use lifecycle rules to define actions you want Amazon S3 to take during an object's lifetime such as transitioning objects to another storage class, archiving them, or deleting them after a specified period of time. [Learn more](#)

Lifecycle rule name	Status	Scope	Current version actions	Noncurrent versions actions	Expired object delete markers	Incomplete multipart uploads
dropbox-files-cycle	Enabled	Filtered	Transition to Standard-IA, then expires	Transition to Glacier Deep Archive	-	-

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EC2

Amazon S3

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

Replicate your data to any storage class to save on storage costs.

Get started

Amazon S3 > Buckets > sanketh-dropbox > Lifecycle configuration > dropbox-files-cycle

## dropbox-files-cycle

Edit Delete Actions ▾

### Lifecycle rule configuration

Lifecycle rule name	Prefix	Minimum object size
dropbox-files-cycle	dropbox-files	-
Status	Object tags	Maximum object size
Enabled	-	-
Scope		
Filtered		

### Review transition and expiration actions

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EC2

Amazon S3

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

### Review transition and expiration actions

Current version actions	Noncurrent versions actions
Day 0 <ul style="list-style-type: none"><li>Objects uploaded</li></ul>	Day 0 <ul style="list-style-type: none"><li>Objects become noncurrent</li></ul>
↓	↓
Day 75 <ul style="list-style-type: none"><li>Objects move to Standard-IA</li></ul>	Day 365 <ul style="list-style-type: none"><li>0 newest noncurrent versions are retained</li><li>All other noncurrent versions move to Glacier Deep Archive</li></ul>
↓	
Day 730 <ul style="list-style-type: none"><li>Objects expire</li></ul>	

25) Implemented DynamoDB and Replica for DynamoDB in other region (Asia Pacific (Mumbai)).

The screenshot shows the AWS DynamoDB console. The left sidebar has 'Tables' selected. The main area displays a table with one item:

Name	Status	Partition key	Sort key	Indexes	Read capacity mode	Write capacity mode
dropbox-files-table	Active	userId (\$)	-	0	Provisioned with auto scaling (1)	Provisioned

The screenshot shows the AWS DynamoDB console with the 'dropbox-files-table' selected. The left sidebar has 'Update settings' selected. The main area shows the 'Overview' tab of the table details page.

**General information**

Partition key userId (String)	Sort key -
Capacity mode Provisioned	Table status Active No active alarms

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EC2

DynamoDB

Dashboard Tables Update settings Explore items PartiQL editor New Backups Exports to S3 Imports from S3 New Reserved capacity Settings New

DAX Clusters Subnet groups

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DynamoDB > Items > dropbox-files-table

## dropbox-files-table

Scan/Query items

Completed Read capacity units consumed: 0.5

Items returned (4)

	userId	description	fileCreatedTime	fileName	fileUpdatedTime
<input type="checkbox"/>	saisanketh671@gmail...	<empty>	Tue Oct 18 2022 2...	IELTS Regis...	Tue Oct 18 2022 2...
<input type="checkbox"/>	saisanketh621@gmail...	<empty>	Tue Oct 18 2022 2...	S.P.JAIN ap...	Tue Oct 18 2022 2...
<input type="checkbox"/>					

C Actions Create item < 1 > ⌂ ⌂

Autopreview View table details

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EC2

Dashboard Tables Update settings Explore items PartiQL editor New Backups Exports to S3 Imports from S3 New Reserved capacity Settings New

DAX Clusters Subnet groups Parameter groups Events

DynamoDB > Tables > dropbox-files-table

## dropbox-files-table

Overview Indexes Monitor Global tables Backups Exports and streams Additional settings

Replicas (1)

Other AWS Regions to which you have replicated this table. You are using global tables version 2019.11.21.

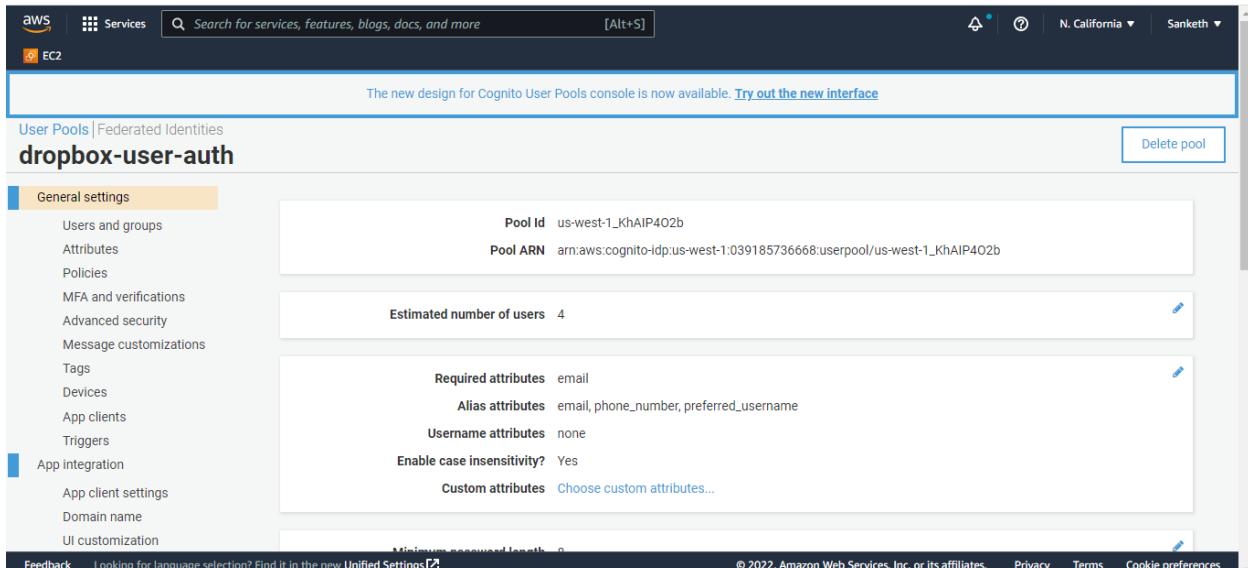
C Delete replica Create replica

Replication Region	Status	Provisioned read capacity	Provisioned write capacity	Endpoint
Asia Pacific (Mumbai)	Active	1-10, auto scaling at 70%	1-10, auto scaling at 70%	dynamodb.ap-south-1.amazonaws.com

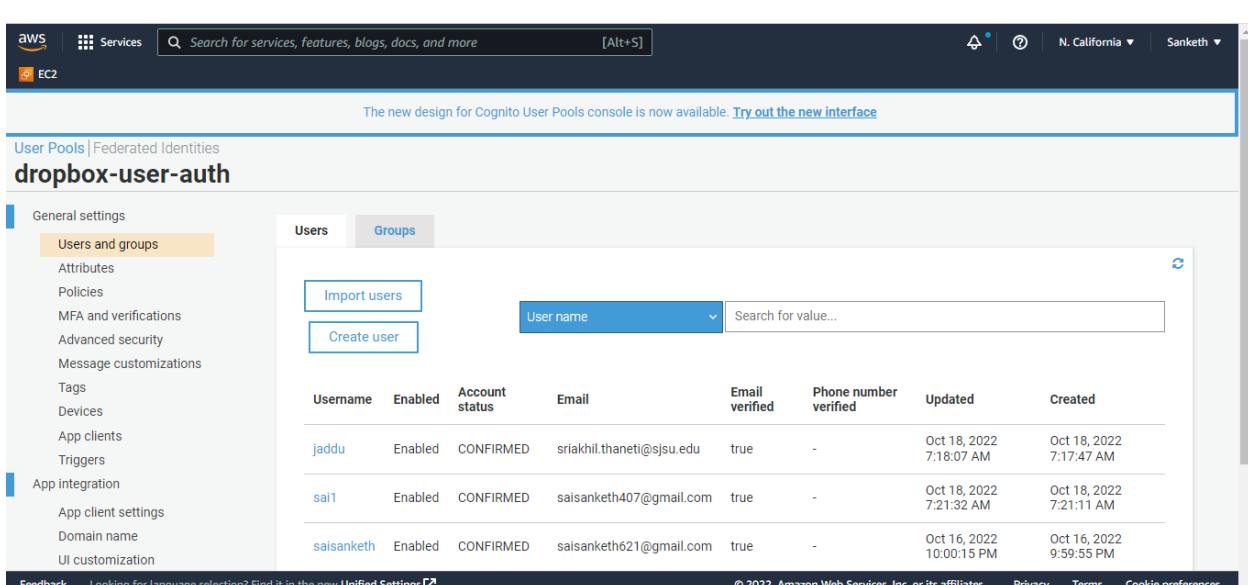
C ⌂ ⌂

Explore table items

## 26) Used AWS Cognito to authenticate user and admin access in the application.



The screenshot shows the AWS Cognito User Pools console. The pool name is 'dropbox-user-auth'. Under 'General settings', the 'Users and groups' section is selected. Pool details show 'Pool Id: us-west-1\_KhAIP402b' and 'Pool ARN: arn:aws:cognito-idp:us-west-1:039185736668:userpool/us-west-1\_KhAIP402b'. The estimated number of users is 4. Required attributes are set to 'email'. Alias attributes include 'email', 'phone\_number', and 'preferred\_username'. Username attributes are set to 'none'. Case sensitivity is set to 'Yes'. There is a link to 'Choose custom attributes...'. The sidebar also lists 'Attributes', 'Policies', 'MFA and verifications', 'Advanced security', 'Message customizations', 'Tags', 'Devices', 'App clients', and 'Triggers'.

The screenshot shows the 'Users' tab in the AWS Cognito User Pools console for the 'dropbox-user-auth' pool. It displays three user entries:

Username	Enabled	Account status	Email	Email verified	Phone number verified	Updated	Created
jaddu	Enabled	CONFIRMED	sriakhil.thaneti@sjsu.edu	true	-	Oct 18, 2022 7:18:07 AM	Oct 18, 2022 7:17:47 AM
sai1	Enabled	CONFIRMED	saisanketh407@gmail.com	true	-	Oct 18, 2022 7:21:32 AM	Oct 18, 2022 7:21:11 AM
saisanketh	Enabled	CONFIRMED	saisanketh621@gmail.com	true	-	Oct 16, 2022 10:00:15 PM	Oct 16, 2022 9:59:55 PM

The sidebar on the left includes 'Import users' and 'Create user' buttons, along with links for 'User name' and 'Search for value...'. Other sections in the sidebar are 'Groups' and 'App integration'.

**User Pools | Federated Identities**

## dropbox-user-auth

**General settings**

- Users and groups
- Attributes**
- Policies
- MFA and verifications
- Advanced security
- Message customizations
- Tags
- Devices
- App clients
- Triggers
- App integration**
- App client settings
- Domain name
- UI customization
- Resource servers
- Federation**
- Identity providers
- Attribute mapping

**How do you want your end users to sign in?**

You can choose to have users sign in with an email address, phone number, username or preferred username plus their password. [Learn more.](#)

**Username** - Users can use a username and optionally multiple alternatives to sign up and sign in.

- Also allow sign in with verified email address
- Also allow sign in with verified phone number
- Also allow sign in with preferred username (a username that your users can change)

**Email address or phone number** - Users can use an email address or phone number as their "username" to sign up and sign in.

- Allow email addresses
- Allow phone numbers
- Allow both email addresses and phone numbers (users can choose one)

(Recommended) Enable case insensitivity for username input

**Which standard attributes are required?**

These attributes were selected when the pool was created and cannot be changed.

Required	Attribute	Required	Attribute
<input type="checkbox"/>	address	<input type="checkbox"/>	nickname
<input type="checkbox"/>	birthdate	<input type="checkbox"/>	phone number
<input checked="" type="checkbox"/>	email	<input type="checkbox"/>	picture
<input type="checkbox"/>	family name	<input type="checkbox"/>	preferred username
<input type="checkbox"/>	gender	<input type="checkbox"/>	profile

**User Pools | Federated Identities**

## dropbox-user-auth

**General settings**

- Users and groups
- Attributes**
- Policies**
- MFA and verifications
- Advanced security
- Message customizations
- Tags
- Devices
- App clients
- Triggers
- App integration**
- App client settings
- Domain name
- UI customization
- Resource servers
- Federation**

**What password strength do you want to require?**

Minimum length

8

Require numbers

Require special character

Require uppercase letters

Require lowercase letters

**Do you want to allow users to sign themselves up?**

You can choose to only allow administrators to create users or allow users to sign themselves up. [Learn more.](#)

Only allow administrators to create users

Allow users to sign themselves up

**How quickly should temporary passwords set by administrators expire if not used?**

You can choose for how long until a temporary password set by an administrator expires if the password is not used. This includes accounts created by administrators.

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EC2

## dropbox-user-auth

General settings

Users and groups

Attributes

Policies

MFA and verifications

Advanced security

Message customizations

Tags

Devices

App clients

Triggers

App integration

App client settings

Domain name

UI customization

Resource servers

Federation

Identity providers

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Do you want to enable Multi-Factor Authentication (MFA)?

Multi-Factor Authentication (MFA) increases security for your end users. If you choose 'optional', individual users can have MFA enabled. You can only choose 'required' when initially creating a user pool, and if you do, all users must use MFA. Phone numbers must be verified if MFA is enabled. You can configure adaptive authentication on the Advanced security tab to require MFA based on risk scoring of user sign in attempts. [Learn more about multi-factor authentication.](#)

Note: separate charges apply for sending text messages.

Off  Optional  Required

How will a user be able to recover their account?

When a user forgets their password, they can have a code sent to their verified email or verified phone to recover their account. You can choose the preferred way to send codes below. We recommend not allowing phone to be used for both password resets and multi-factor authentication (MFA). [Learn more.](#)

Email if available, otherwise phone, but don't allow a user to reset their password via phone if they are also using it for MFA  
 Phone if available, otherwise email, but don't allow a user to reset their password via phone if they are also using it for MFA  
 Email only  
 Phone only, but don't allow a user to reset their password via phone if they are also using it for MFA  
 (Not Recommended) Phone if available, otherwise email, and do allow a user to reset their password via phone if they are also using it for MFA.  
 None – users will have to contact an administrator to reset their passwords

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EC2

## dropbox-user-auth

General settings

Users and groups

Attributes

Policies

MFA and verifications

Advanced security

Message customizations

Tags

Devices

App clients

Triggers

App integration

App client settings

Domain name

UI customization

Resource servers

Federation

Identity providers

Feedback Looking for language selection? Find it in the new Unified Settings

Which app clients will have access to this user pool?

The app clients that you add below will be given a unique ID and an optional secret key to access this user pool.

drop-box

App client id

15qirgu7eubs9btbr0s4o7e7

Show Details

Add another app client

Return to pool details

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EC2 Advanced security Message customizations Tags Devices App clients Triggers App integration App client settings Domain name UI customization Resource servers Federation Identity providers Attribute mapping

**App client drop-box**  
ID l5qirgu7eubs9btbr0s4o7e7

**Enabled Identity Providers**  Select all Cognito User Pool

**Sign in and sign out URLs**  
Enter your callback URLs below that you will include in your sign in and sign out requests. Each field can contain multiple URLs by entering a comma after each URL.

**Callback URL(s)**

**Sign out URL(s)**

**OAuth 2.0**  
Select the OAuth flows and scopes enabled for this app. [Learn more about flows and scopes](#).

**Allowed OAuth Flows**  
 Authorization code grant  Implicit grant  Client credentials

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EC2 General settings Users and groups Attributes Policies MFA and verifications Advanced security Message customizations Tags Devices App clients Triggers App integration App client settings Domain name UI customization Resource servers Federation Identity providers

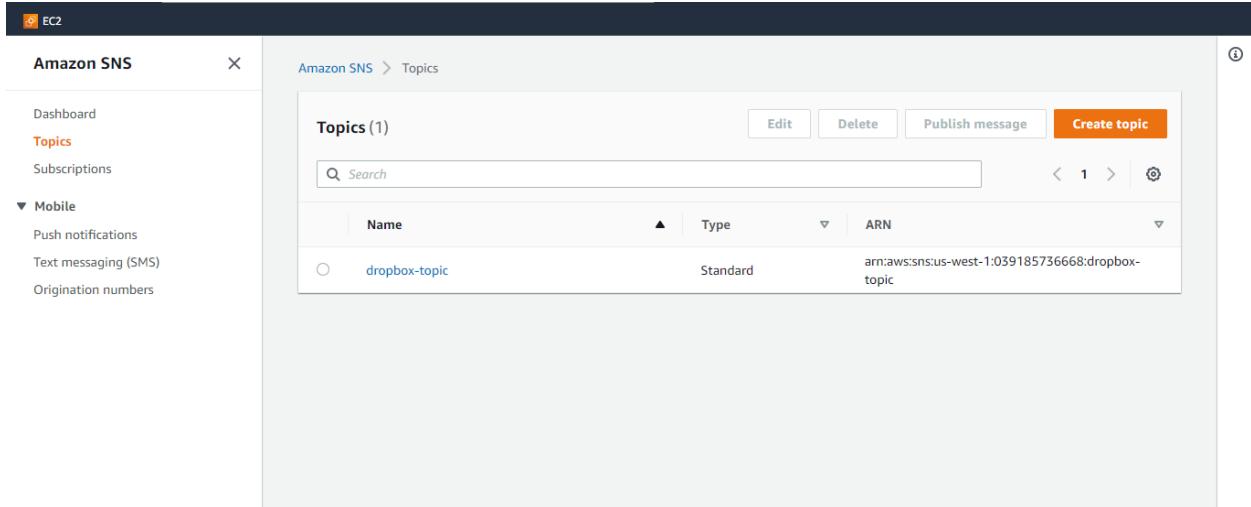
**What domain would you like to use?**  
Type a domain prefix to use for the sign-up and sign-in pages that are hosted by Amazon Cognito. The prefix must be unique across the selected AWS Region. Domain names can only contain lower-case letters, numbers, and hyphens. [Learn more about domain prefixes](#).

**Amazon Cognito domain**  
Prefixed domain names can only contain lower-case letters, numbers, and hyphens. [Learn more about domain prefixes](#).

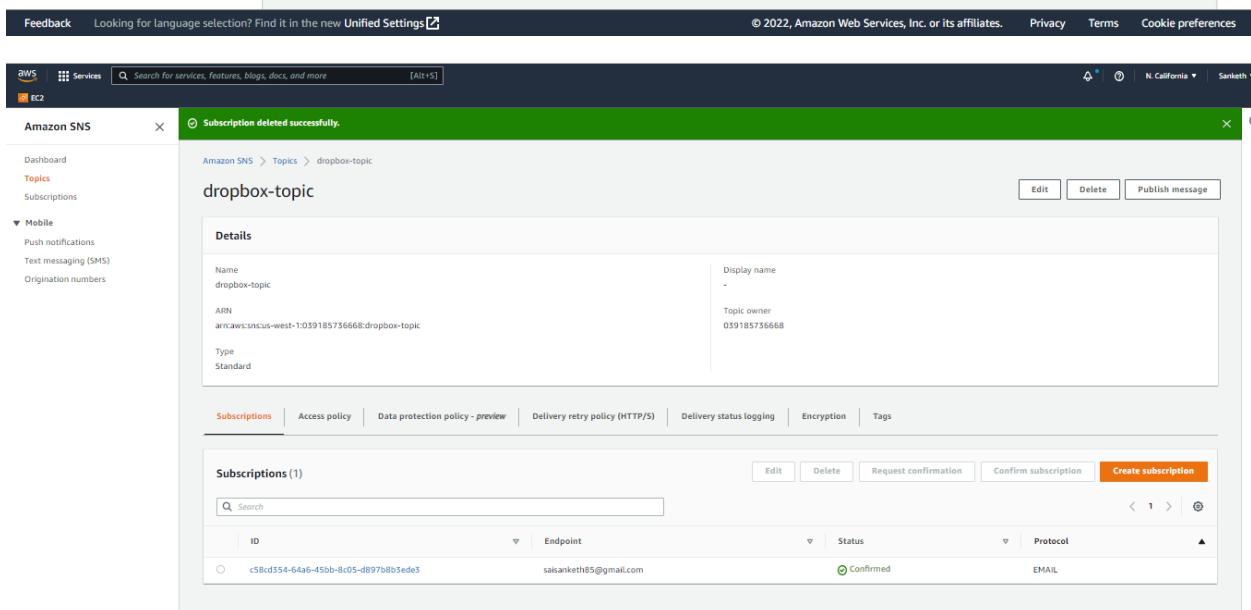
**Domain prefix**  
 .auth.us-west-1.amazoncognito.com

**Your own domain**  
This domain name needs to have an associated certificate in [AWS Certificate Manager \(ACM\)](#). You also need the ability to add an alias record to the domain's hosted zone after it's associated with this user pool. [Learn more about using your own domain](#).

27) Created AWS Simple Notification Service to notify user while uploading/deleting the files into the application (in S3 bucket in background)



The screenshot shows the AWS SNS Topics page. On the left, there's a sidebar with 'Amazon SNS' and 'EC2' buttons. Under 'Amazon SNS', the 'Topics' link is highlighted. The main area shows a table titled 'Topics (1)'. The table has columns for 'Name', 'Type', and 'ARN'. One row is listed: 'dropbox-topic' (Type: Standard, ARN: arn:aws:sns:us-west-1:039185736668:dropbox-topic). There are buttons for 'Edit', 'Delete', 'Publish message', and 'Create topic'.

This screenshot shows the 'dropbox-topic' details page. At the top, a green banner says 'Subscription deleted successfully.' The main section is titled 'dropbox-topic' and contains a 'Details' table with fields like Name (dropbox-topic), Display name (-), ARN (arn:aws:sns:us-west-1:039185736668:dropbox-topic), Topic owner (039185736668), and Type (Standard). Below the details is a navigation bar with tabs: Subscriptions, Access policy, Data protection policy - preview, Delivery retry policy (HTTP/S), Delivery status logging, Encryption, and Tags. The 'Subscriptions' tab is selected, showing a table with one row: ID (c58cd354-64a6-45bb-8c05-d897b8b3ede3), Endpoint (saikanketh85@gmail.com), Status (Confirmed), and Protocol (EMAIL).

28) Implemented Lambda function to trigger SNS if there is any action in S3 bucket and cloud watch to track the updates of S3 bucket

The screenshot shows the AWS Lambda console. On the left, the navigation sidebar includes 'AWS Lambda', 'Dashboard', 'Applications', 'Functions' (which is selected), 'Additional resources', 'Code signing configurations', 'Layers', 'Replicas', and 'Related AWS resources'. The main content area displays a table titled 'Functions (1)' with one entry: 'dropbox-sns'. The table columns are 'Function name', 'Description', 'Package type', 'Runtime', and 'Last modified'. The 'dropbox-sns' row shows a '-' under 'Description', 'Zip' under 'Package type', 'Python 3.9' under 'Runtime', and 'yesterday' under 'Last modified'. At the top right of the main area, there are buttons for 'Actions' and 'Create function'.

The screenshot shows the 'Function overview' page for the 'dropbox-sns' function. The top navigation bar shows 'Lambda > Functions > dropbox-sns'. The main content area has tabs for 'Function overview' (which is selected) and 'Info'. Under 'Function overview', there is a summary card with the function name 'dropbox-sns', 'Layers (0)', and two triggers: 'S3 (2)' and 'Amazon SNS'. Below the summary card are buttons for '+ Add trigger' and '+ Add destination'. To the right of the summary card, there are sections for 'Description' (empty), 'Last modified' (yesterday), 'Function ARN' (arn:aws:lambda:us-west-1:039185736668:function:dropbox-sns), and 'Function URL' (Info). At the bottom of the page, there are tabs for 'Code', 'Test', 'Monitor', 'Configuration', 'Aliases', and 'Versions'.

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EC2

File Edit Find View Go Tools Window Test Deploy Changes not deployed

lambda\_function

Environment Go to Anything (Ctrl+P)

```

1 import json
2 import urllib.parse
3 import boto3
4
5 print('Loading function')
6
7 s3 = boto3.client('s3')
8 sns = boto3.client('sns')
9
10 def lambda_handler(event, context):
11     #print("Received event: " + json.dumps(event, indent=2))
12
13     # Get the object, Key and eventName from the event and show its content type
14     bucket = event['Records'][0]['s3']['bucket']['name']
15     key = event['Records'][0]['s3']['object']['key']
16     eventname = event['Records'][0]['eventName']
17
18     sns_message = str("This Email Represent a File Status has been Changed in One of Your Bucket \n\n BUCKET NAME: " + bucket)
19     try:
20         print(eventname)
21         if eventname == "ObjectRemoved:Delete":
22             print("File is being Deleted")
23             sns_message += str("File Deleted")
24         else:
25             response = s3.get_object(Bucket=bucket, Key=key)
26             sns_message += str("FILE CONTENT TYPE: " + str(response['ContentType']) + "\n\nFILE CONTENT: " + str(response['Body']))
27             print(str(sns_message))
28     subject= "S3 Bucket[" + bucket + "] Event[" + eventname + "]"

```

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https:// us-west-1.console.aws.amazon.com/cloudwatch/home?region=us-west-1#alarmsV2:~(alarmStateFilter~'OK')

CloudWatch Cloudwatch IAM Cloud CloudWatch Target React Signin React Project

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EC2

CloudWatch Alarms

Alarms (8) Hide Auto Scaling alarms Clear selection Create composite alarm Actions Create alarm

Name	State	Last state update	Conditions	Actions
TargetTracking-table/dropbox-files-table-ProvisionedCapacity	OK	2022-10-16 13:21:48	ProvisionedWriteCapacityUnits > 1 for 3 datapoints within 15 minutes	<span>Actions</span>
TargetTracking-table/dropbox-files-table-ProvisionedCapacity	OK	2022-10-16 13:21:35	ProvisionedReadCapacityUnits > 1 for 3 datapoints within 15 minutes	<span>Actions</span>

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The screenshot shows the AWS CloudWatch Metrics Dashboard. On the left, there's a sidebar with navigation links like Favorites and recents, Dashboards, Alarms (with 6 items), Logs, Metrics, X-Ray traces, Events, Application monitoring, and Insights. The main area displays three CloudWatch Metrics alarms:

- TargetTracking-table/dropbox-files-table-ProvisionedCapacityLow-6f5ceffc-948d-4d20-858d-16d5ddb5c0e: Status OK, Last updated 2022-10-16 13:20:27. Description: ProvisionedWriteCapacityUnits < 1 for 3 datapoints within 15 minutes.
- TargetTracking-table/dropbox-files-table-AlarmHigh-695e0e95-9974-4676-8567-e09b33eeef88a: Status OK, Last updated 2022-10-16 13:20:20. Description: ConsumedReadCapacityUnits > 42 for 2 datapoints within 2 minutes.
- TargetTracking-table/dropbox-files-table-AlarmHigh-4acb8183-e9bf-4c7c-80b3-1bdfd7da7b29: Status OK, Last updated 2022-10-16 13:19:42. Description: ConsumedWriteCapacityUnits > 42 for 2 datapoints within 2 minutes.

At the bottom, there's a feedback bar, a search bar, and a Windows taskbar with various icons and system status.

29) Created Ubuntu EC2 instances to deploy the application using Ngnix server for react frontend and Node server for backend, created a elastic IP and attached it to EC2 instance to have static IP address and also created load balancer, auto scaling group to adjust the load on server

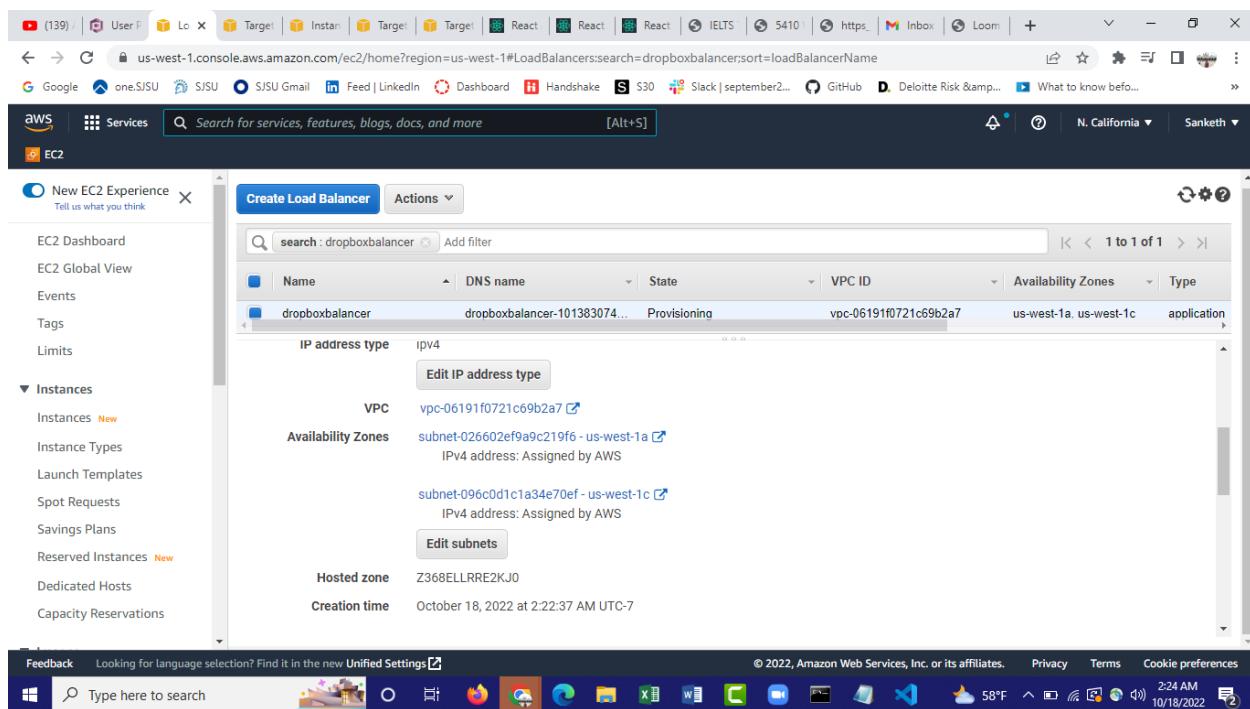
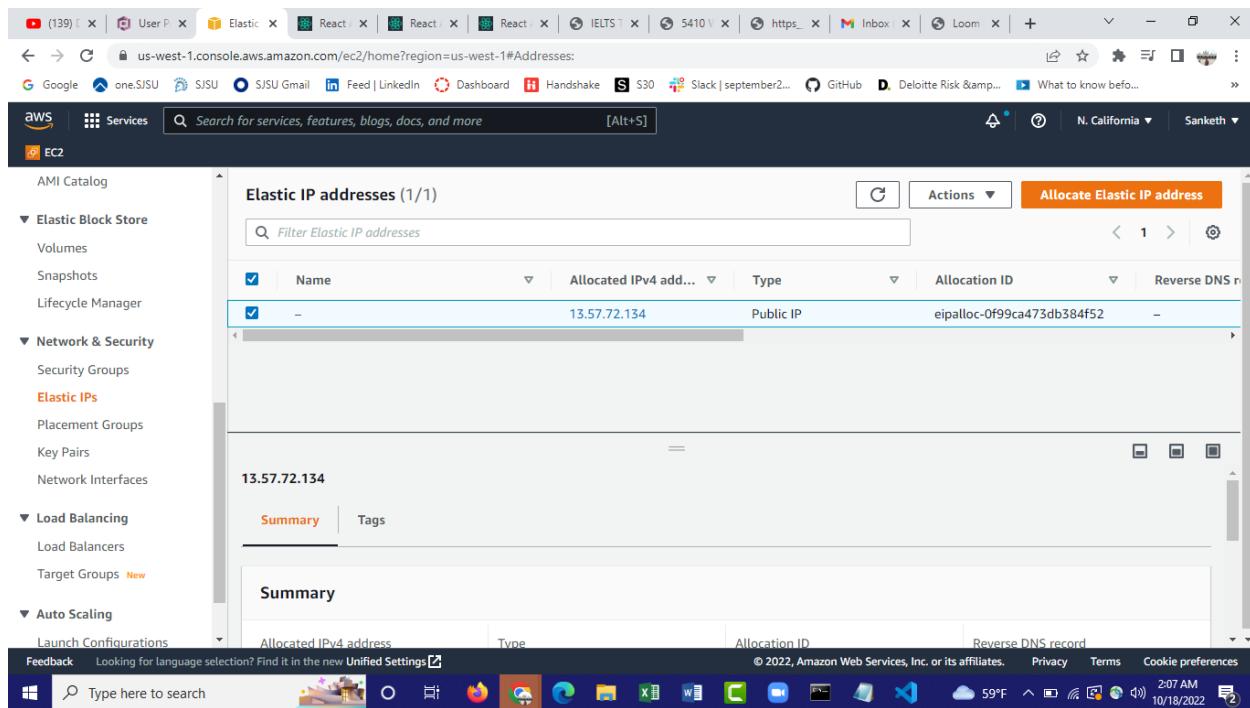
The screenshot shows the AWS EC2 Instances page. The sidebar includes links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, and Instances (with sub-links for Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations). The main table lists one instance:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
dropboxserver	i-0b82d7f96cf18087a	Running	t2.micro	2/2 checks passed	No alarms	us-west-1a

A modal window titled "Select an instance" is displayed, prompting the user to choose an instance to launch. At the bottom, there's a feedback bar, a search bar, and a Windows taskbar.

The screenshot shows the AWS EC2 Instances page. On the left, a sidebar lists various EC2-related options like Dashboard, Global View, Events, Tags, Limits, and Instances (selected). The main content area displays the 'Instance summary for i-0b82d7f96cf18087a (dropboxserver)'. The summary table includes fields such as Instance ID, Public IPv4 address, Private IP addresses, IPv6 address, Instance state, Hostname type, Private IP DNS name, Instance type, Answer private resource DNS name, VPC ID, Auto-assigned IP address, Elastic IP addresses, and AWS Compute Optimizer finding. A 'Learn more' link is also present.

This screenshot shows the 'Details' tab of the instance configuration page for the same instance. The 'Instance details' section contains detailed information about the instance's configuration, including Platform (Ubuntu), AMI ID, Monitoring status, Platform details (Linux/UNIX), Termination protection, Stop protection (Disabled), Launch time, AMI name, AMI location, Instance auto-recovery (Default), Lifecycle (normal), Stop-hibernate behavior, AMI launch index (0), Key pair name (dropbox), State transition reason, Credit specification (standard), Kernel ID, State transition message, RAM disk ID, and Owner.



The screenshot shows the AWS EC2 Target Groups console. On the left, a sidebar lists various services: Volumes, Snapshots, Lifecycle Manager, Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), Auto Scaling (Launch Configurations, Auto Scaling Groups). The 'Target Groups' section is selected. The main pane displays a table titled 'Target groups (1)'. The table has columns: Name, ARN, Port, Protocol, and Target type. One entry is listed: 'cloudcg' with ARN 'arn:aws:elasticloadbalancing:us-west-2:123456789012:targetgroup/cloudcg/54321', Port 80, Protocol HTTP, and Target type Instance. Below the table, a message says '0 target groups selected' and 'Select a target group above.'

### 30) Implemented Route 53 AWS service to host the application

(host name: saisanketh-ravva.com)

The screenshot shows the AWS Route 53 Hosted zones console. On the left, a sidebar lists: Dashboard, Hosted zones (selected), Health checks, IP-based routing (CIDR collections), Traffic flow (Traffic policies, Policy records), Domains (Registered domains, Pending requests), and Resolver (VPCs). The main pane displays a table titled 'Hosted zones (1)'. The table has columns: Domain name, Type, Created..., Record co..., Descript..., and Hostedzon... . One entry is listed: 'saisanketh-ravva.com' with Type Public, Created... 4 days ago, Record co... 4, Description HostedZoneId: Z05958377NK..., and Hostedzon... Z05958377NK... .

The screenshot shows the AWS Route 53 console with the URL [us-east-1.console.aws.amazon.com/route53/v2/hostedzones#ListRecordSets/Z05958377NKN8DF47V7N](https://us-east-1.console.aws.amazon.com/route53/v2/hostedzones#ListRecordSets/Z05958377NKN8DF47V7N). The left sidebar is collapsed, showing the main navigation menu. The main content area displays a table titled "Records (4) Info" with the following data:

Record name	Type	Routing...	Differ...	Value/Route traffic to
saisanketh-ravva.com	A	Simple	-	13.57.72.134 ns-331.awsdns-41.com. ns-1959.awsdns-52.co.uk. ns-825.awsdns-39.net. ns-1356.awsdns-41.org.
saisanketh-ravva.com	NS	Simple	-	ns-331.awsdns-41.com. awsdns-hostmaster
saisanketh-ravva.com	SOA	Simple	-	ns-331.awsdns-41.com. awsdns-hostmaster
www.saisanketh-ravva.com	CNAME	Simple	-	13.57.72.134

The bottom of the screen shows a Windows taskbar with various icons and the date/time: 10/18/2022, 2:04 AM.

31) I used Visual Studio Code for development, my code github link is given below:

<https://github.com/saisankethravva/cloudproject.git>

32) The application video link is given below

<https://drive.google.com/file/d/10jDikyx0TX68laD7fKzsy9NnMapLosH8/view?usp=sharing>