

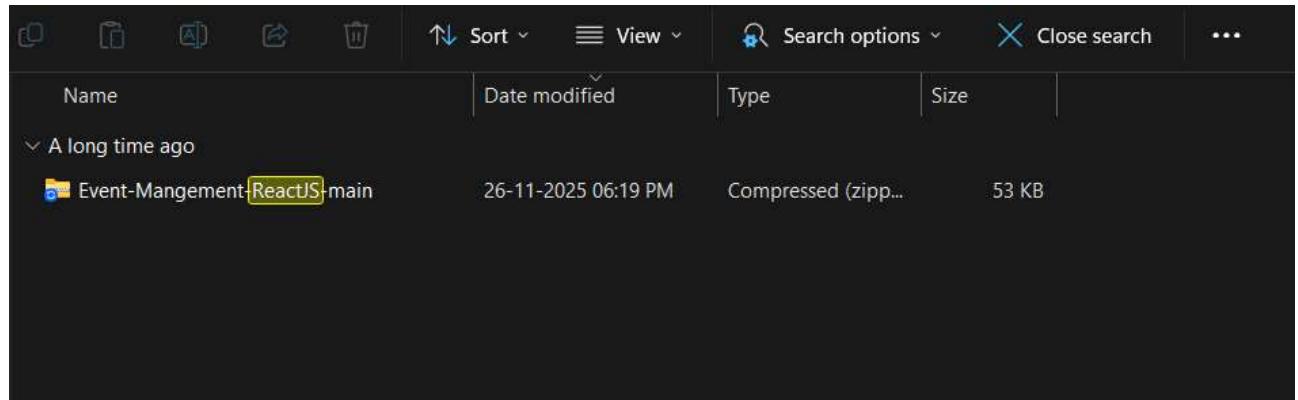
## Deployment of ReactJS Application using AWS EC2, S3 and NGINX

The deployment process involved object storage using Amazon Simple Storage Service (S3), compute resources using Amazon Elastic Compute Cloud (EC2), secure access control via IAM Role, and application hosting using the NGINX web server.

### Use Of Amazon S3

- The React application ZIP file was uploaded to S3.
- The EC2 instance downloaded the file securely using an IAM Role.

In this deployment s3 acts as a storage repository. Firstly i created a s3 bucket uploaded my application file in bucket from local storage :



Amazon S3 > Buckets

A screenshot of the AWS S3 buckets page. At the top, there are two tabs: 'General purpose buckets' (which is selected) and 'Directory buckets'. Below this is a button for 'Create bucket'. A message says 'Buckets are containers for data stored in S3.' There is a search bar with the placeholder 'Find buckets by name'. Below the search bar is a table with columns: 'Name', 'AWS Region', and 'Creation date'. One row is visible, showing a bucket named 'nandkishor-89877665' in the 'US East (N. Virginia) us-east-1' region, created on 'January 23, 2026, 17:41:06 (UTC+05:30)'. The table has sorting arrows for each column.

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added my application file in bucket which was a zip file :

The screenshot shows the Amazon S3 console. At the top, a green banner indicates "Upload succeeded". Below it, a message says "For more information, see the Files and folders table." A note below that says "After you navigate away from this page, the following information is no longer available." The main area has a "Summary" section with "Destination" set to "s3://nandkishor-89877665". It shows one succeeded file: "Event-Mangement-ReactJS-mai..." (application/x-zip-compressed, 53.0 KB, 100.00%). There is also a failed entry with "0 files, 0 B (0%)". Below this is a "Files and folders" table with one item listed. The table columns include Name, Folder, Type, Size, Status, and Error.

launching EC2 instance :

The screenshot shows the "Launch an instance" wizard in the AWS EC2 console. The first step, "Name and tags", shows a name "project007" and a "Add additional tags" button. The second step, "Application and OS Images (Amazon Machine Image)", shows a search bar and a grid of quick start AMIs: Amazon Linux, macOS, Ubuntu, Windows, Red Hat, SUSE Linux, and Debian. To the right, there's a summary section with "Number of instances": 1, "Software Image (AMI)": Amazon Linux 2023 AMI 2023.10..., "Virtual server type (instance type)": t3.micro, "Firewall (security group)": New security group, and "Storage (volumes)": 1 volume(s) - 8 GiB. At the bottom right are "Cancel" and "Launch instance" buttons, with "Preview code" below "Launch instance".

**Success**  
Successfully initiated launch of instance ([i-0a9e5b42821d04772](#))

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create a IAM role so that we will get accesss to s3 and attach it directly to EC2 instance :

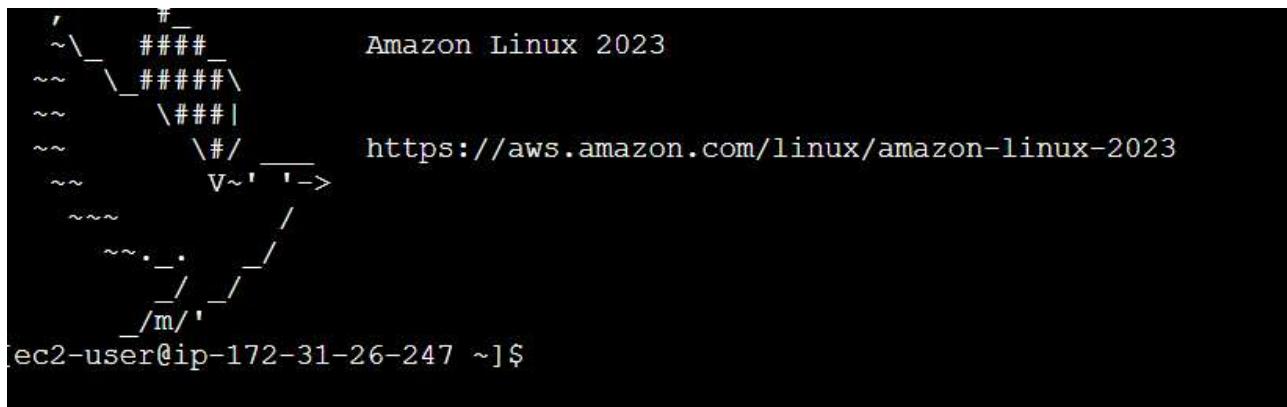
The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Capacity Manager, and Images. The main area displays the 'Instance summary for i-0a9e5b42821d04772 (project007)'. It includes fields for Instance ID (i-0a9e5b42821d04772), Public IPv4 address (13.220.57.121), Instance state (Running), Private IP DNS name (ip-172-31-26-247.ec2.internal), Instance type (t3.micro), VPC ID (vpc-0b053c23d15c6e5a3), Subnet ID (subnet-0a1ff432f7dc72c5e), and IAM role (ec2-s3-access-role). A context menu on the right provides options like Connect, Instance state, Actions, Change security groups, Get Windows password, Modify IAM role, Instance diagnostics, Instance settings, Networking, Security, Image and templates, Storage, Monitor and troubleshoot, and Elastic IP addresses.

modify IAM role : attach the we creataed to give full access of S3 to copy application file to EC2

The screenshot shows the 'Modify IAM role' page for the instance i-0a9e5b42821d04772. It has a 'Create new IAM role' button and a 'Cancel' button. The IAM role dropdown is currently set to 'ec2-s3-access-role'.

Connecting to EC2 Instance : The instance was accessed using SSH

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## **Installation of Required Software**

The following packages were installed:

- NodeJS
  - npm
  - unzip
  - awscli
  - nginx

Prepare environment for building and serving the application.

```
4 yum update -y
5 sudo yum update -y
6 sudo yum install -y unzip awscli docker
7 sudo systemctl start docker
8 sudo systemctl enable docker
```

## Copying File from S3 to EC2

command for it is : `aws s3 cp s3://bucket-name/file.zip /home/ec2-user/`

## Extracting Application

```
12 sudo systemctl status docker
13 clear
14 aws s3 cp s3://nandkishor-89877665/Event-Mangement-ReactJS-main.zip /home/ec2-user/
15 unzip Event-Mangement-ReactJS-main
16 cd Event-Mangement-ReactJS-main/
```

install dependencies using a command : npm install

it creates node\_modules folder

after installing dependencies start nginx service by command : sudo systemctl start nginx and enable it

after enabling, deploy build files to NGINX directory

```
40 sudo rm -rf /usr/share/nginx/html/*
41 sudo cp -r dist/* /usr/nginx/html/
42 sudo cp -r dist/* /usr/share/nginx/html/
```

Now we can access our application with public ip that we will get from instance interface in this process browser sends http request to EC2 processed by NGINX then EC2 serves static react files so that application should run on browser

### Result :

The screenshot shows a web application interface with a light gray header bar containing 'Home' and 'Find Events' links. Below this, there are two event cards displayed in a grid. The first card, titled 'EPIC COMIC CON', includes details: Year: 2023, Month: July, and Location: Mumbai, India. It features a thumbnail image of comic book covers for 'Silver Surfer', 'Spider-Man', and 'Colonial Marines'. The second card, titled 'FANTASY GAMING EXPO', includes details: Year: 2024, Month: May, and Location: Delhi, India. It features a thumbnail image of a gaming setup with multiple monitors displaying various game scenes.

Application Interface