

# Migration

## FULL DETAILED STEP-BY-STEP GUIDE

(Using AWS CloudShell → EC2 → GitHub → Node.js)

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### STEP 1— Open AWS CloudShell

1. Login to AWS Console
2. On the top-right, click **CloudShell icon**  
(looks like a terminal)

Wait 10–15 seconds — a terminal opens.

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### STEP 2— Upload your .pem file to CloudShell

1. Click **Actions** → **Upload file**
2. Select your key file, e.g.:

```
2401090.pem
```

Now it appears inside your CloudShell home directory.

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### STEP 3— Set correct permissions on PEM

In CloudShell terminal:

```
chmod 400 2401090.pem
```

✓ Prevents “UNPROTECTED KEY FILE” error

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## **STEP 4 — SSH from CloudShell into EC2**

Find your EC2 Public IP first:

- EC2 → Instances → Public IPv4 address

Example: 54.196.251.37

**If your EC2 AMI is**

**Ubuntu**

```
ssh -i 2401090.pem ubuntu@54.196.251.37
```

**If your EC2 AMI is**

**Amazon Linux**

```
ssh -i 2401090.pem ec2-user@54.196.251.37
```

You will now enter inside your EC2 instance:

```
ubuntu@ip-XXX-XXX-XXX:~$
```

## **STEP 5 — Install Git**

Inside EC2 terminal:

**Ubuntu**

```
sudo apt update && sudo apt install -y git
```

**Amazon Linux**

```
sudo yum update -y && sudo yum install -y git
```

## STEP 6 — Clone your GitHub repository

(Recommended: directly download code on EC2)

Replace with your repo link:

```
git clone https://github.com/<yourUser>/<yourRepo>.git
```

Example:

```
git clone https://github.com/VivekKamble014/Node_App.git
```

Then:

```
cd Node_App
```

## STEP 7 — Install Node.js on EC2

### Ubuntu:

```
curl -fsSL https://deb.nodesource.com/setup_18.x | sudo -E bash -  
sudo apt install -y nodejs
```

Verify:

```
node -v  
npm -v
```

### Install Node.js 18 (recommended LTS)

```
curl -fsSL https://rpm.nodesource.com/setup\_18.x | sudo bash -  
sudo yum install -y nodejs
```

verify:

```
node -v  
npm -v
```

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## STEP 8 — Install project dependencies

Inside your project directory:

```
npm install
```

If your project needs a build:

```
npm run build
```

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## STEP 9 — Run your Node.js app

If your entry file is app.js:

```
node app.js
```

If your entry is index.js:

```
node index.js  
or  
npm start
```

If package.json has:

```
"scripts": {  
  "start": "node app.js"  
}
```

Then run:

```
npm start
```

Your terminal will show something like:

```
Server running on port 3000
```

## **STEP 10 — Allow EC2 inbound traffic (VERY IMPORTANT)**

Go to:

**EC2 → Instances → Security → Security Group → Edit inbound rules**

Add:

Type	Port	Source
Custom TCP	3000	0.0.0.0/0

Save.

Now open your project in browser:

```
http://YOUR_EC2_PUBLIC_IP:3000
```

Example:

```
http://54.196.251.37:3000
```

## **OPTIONAL (Recommended)**

### **STEP 11 — Run the app permanently using PM2**

Install PM2:

```
sudo npm install -g pm2
```

Start your app:

```
pm2 start app.js
```

Save process:

```
pm2 save
```

View running apps:

```
pm2 status
```

PM2 keeps your Node app alive even after SSH logout.

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### **STEP 12 — Screenshots needed for your assignment**

Take screenshots of:



**Mac/GitHub**

- Your GitHub repository



**CloudShell**

- Upload PEM

- chmod 400 2401090.pem
- CloudShell SSH command to EC2

## **EC2 Terminal**

- git clone
- npm install
- npm start
- Node server running

## **Browser**

- Opening app from  
<http://<EC2-IP>:3000>

## **Security Group**

- Inbound rule for port 3000
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