1. Backend Configuration

Clone the Backend Repository on EC2

```
ubuntu@ip-172-31-18-165:~$ git clone https://github.com/rindvk302/TravelMemory.git
Cloning into 'TravelMemory'...
remote: Enumerating objects: 119, done.
remote: Counting objects: 100% (70/70), done.
remote: Compressing objects: 100% (51/51), done.
remote: Total 119 (delta 33), reused 19 (delta 19), pack-reused 49 (from 1)
Receiving objects: 100% (119/119), 198.68 KiB | 16.56 MiB/s, done.
Resolving deltas: 100% (40/40), done.
ubuntu@ip-172-31-18-165:~$
```

Install Node and PM2

```
ubuntu@ip-172-31-18-165:~$ sudo apt install -y nodejs
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libcares2 libnode109 node-acorn node-busboy node-cjs-module-lexer node-undici node-xtend nodejs-doc
Suggested packages:
  npm
The following NEW packages will be installed:
  libcares2 libnode109 node-acorn node-busboy node-cjs-module-lexer node-undici node-xtend nodejs nodejs-doc
0 upgraded, 9 newly installed, 0 to remove and 38 not upgraded.
Need to get 16.1 MB of archives.
```

```
ubuntu@ip-172-31-18-165:~$ node -v
v18.19.1
ubuntu@ip-172-31-18-165:~$
ubuntu@ip-172-31-18-165:~$
ubuntu@ip-172-31-18-165:~$ npm -v
9.2.0
ubuntu@ip-172-31-18-165:~$ ls
```

Backend Setup

```
ubuntu@ip-172-31-18-165:~$ ls
TravelMemory
ubuntu@ip-172-31-18-165:~$ cd TravelMemory
ubuntu@ip-172-31-18-165:~/TravelMemory$
ubuntu@ip-172-31-18-165:~/TravelMemory$
ubuntu@ip-172-31-18-165:~/TravelMemory$
ubuntu@ip-172-31-18-165:~/TravelMemory$
ubuntu@ip-172-31-18-165:~/TravelMemory$ ls
LICENSE   README.md   azure-pipelines.yml   backend   frontend
ubuntu@ip-172-31-18-165:~/TravelMemory$ cd backend
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$ npm install

added 117 packages, and audited 118 packages in 4s

13 packages are looking for funding
  run `npm fund` for details

15 vulnerabilities (4 low, 1 moderate, 9 high, 1 critical)

To address issues that do not require attention, run:
  npm audit fix

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$ |
```

.env Configuration

```
ubuntu@ip-172-31-18-165: ~/TravelMemory/backend                                              –  □  X

  GNU nano 7.2                                       .env *
MONGO_URI='mongodb+srv://rindvk_db_user:xJ5Gnavr6Dkk0iCb@travelmemory-cluster.yqimgjv.mongodb.net/?retryWrites=true&w=majority&appName=travelmemory-cluster'
PORT=3000
```

```
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$ cat nano .env
cat: nano: No such file or directory
MONGO_URI='mongodb+srv://rindvk_db_user:xJ5Gnavr6Dkk0iCb@travelmemory-cluster.yqimgjv.mongodb.net/?retryWrites=true&w=majority&appName=travelmemory-cluster'
PORT=3000
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$
```

Test Backend

```
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$ npm start

> travelmemory-be@1.0.0 start
> node index.js

Server started at http://localhost:3000
^C
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$ node index.js
Server started at http://localhost:3000
```

Configure Nginx as Reverse Proxy

```
ubuntu@ip-172-31-18-165: ~/TravelMemory/backend

  GNU nano 7.2
server {
    listen 80;
    server_name 3.80.94.179;

    location /api/ {
        proxy_pass http://localhost:3000/;
        proxy_http_version 1.1;
        proxy_set_header Upgrade $http_upgrade;
        proxy_set_header Connection 'upgrade';
        proxy_set_header Host $host;
        proxy_cache_bypass $http_upgrade;
    }
}
```

```
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
ubuntu@ip-172-31-18-165:~/TravelMemory/backend$
```

2. Frontend and Backend Connection

Frontend Setup

```
ubuntu@ip-172-31-18-165:~/TravelMemory$ cd frontend
ubuntu@ip-172-31-18-165:~/TravelMemory/frontend$
ubuntu@ip-172-31-18-165:~/TravelMemory/frontend$
ubuntu@ip-172-31-18-165:~/TravelMemory/frontend$
ubuntu@ip-172-31-18-165:~/TravelMemory/frontend$ npm install
npm WARN deprecated rollup-plugin-terser@7.0.2: This package has been deprecated and is no longer maintained. Please use @rollup/plugin-terser
npm WARN deprecated stable@0.1.8: Modern JS already guarantees Array#sort() is a stable sort, so this library is deprecated. See the compatibility table on MD
N: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/sort#browser_compatibility
npm WARN deprecated w3c-hr-time@1.0.2: Use your platform's native performance.now() and performance.timeOrigin.
npm WARN deprecated sourcemap-codec@1.4.8: Please use @jridgewell/sourcemap-codec instead
npm WARN deprecated workbox-cacheable-response@6.6.0: workbox-background-sync@6.6.0
npm WARN deprecated svgo@1.3.2: This SVGO version is no longer supported. Upgrade to v2.x.x.

added 1504 packages, and audited 1505 packages in 47s

236 packages are looking for funding
  run `npm fund` for details

39 vulnerabilities (6 low, 14 moderate, 17 high, 2 critical)

To address issues that do not require attention, run:
  npm audit fix

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
ubuntu@ip-172-31-18-165:~/TravelMemory/frontend$
```

Update urls.js

```
ubuntu@ip-172-31-18-165:~/TravelMemory/frontend/src$ cat url.js
const BASE_URL = "http://3.80.94.179/api";
export default BASE_URL;
```
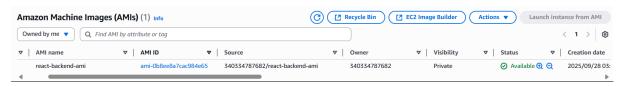
Build & Serve

```
ubuntu@ip-172-31-18-165:~/TravelMemory/frontend$ serve -n -s build

   Serving!

   - Local:    http://localhost:3000
   - Network:  http://172.31.18.165:3000
```
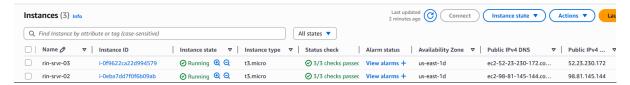
3. Scaling with Load Balancer (AWS)

Create a Custom AMI (Image)

	AMI name	AMI ID	Source	Owner	Visibility	Status	Creation date
	react-backend-ami	ami-0b8ee8a7cac984e65	340334787682/react-backend-ami	340334787682	Private	⊘ Available 🔍 🔍	2025/09/28 03:

Amazon Machine Images (AMIs) (1) Info 🔄 Recycle Bin   EC2 Image Builder   Actions ▼   Launch instance from AMI

Owned by me ▼ | Find AMI by attribute or tag

Launch Multiple EC2 Instances from AMI

Instances (3) Info   Last updated 2 minutes ago   Connect   Instance state ▼   Actions ▼

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
	rin-srvr-03	i-0f9622ca22d994579	⊘ Running 🔍 🔍	t3.micro	⊘ 3/3 checks passed	View alarms +	us-east-1d	ec2-52-23-230-172.co...	52.23.230.172
	rin-srvr-02	i-0eba7dd7f0f6b09ab	⊘ Running 🔍 🔍	t3.micro	⊘ 3/3 checks passed	View alarms +	us-east-1d	ec2-98-81-145-144.co...	98.81.145.144

Configure Target Groups

Target groups (2) Info   🔄 Actions ▼   Create target group

	Name	ARN	Port	Protocol	Target type	Load balancer	VPC ID
	backend-tg	arn:aws:elasticloadbalancin...	80	HTTP	Instance	ⓘ None associated	vpc-0df8f0fa68217a5e9
	frontend-tg	arn:aws:elasticloadbalancin...	80	HTTP	Instance	ⓘ None associated	vpc-0df8f0fa68217a5e9

Create an Application Load Balancer (ALB)

Load balancers (1/1)   🔄 Actions ▼   Create load balancer ▼

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

	Name	State	Type	Scheme	IP address type	VPC ID	Availability Zones	Security groups	DNS name
✓	react-app-alb	⊘ Active	application	Internet-facing	IPv4	vpc-0df8f0fa68217a5e9	2 Availability Zones	sg-0d38c97a04326327..	🗗 react-app-alb-4

Configure Listener Rules for Path-Based Routing

Rules | Attributes | Tags

Listener rules (3) Info   Rule limits   🔄 Actions ▼   Add rule

Traffic received by the listener is routed according to the default action and any additional rules. Rules are evaluated in priority order from the lowest value to the highest value.

	Priority	Name tag	Conditions (If)	Actions (Then)	ARN	Tags	Actions
	1	-	Path = /api/*	• **Forward to target group** backend-tg ☑: 1 (100%) Target group stickiness: Off	🗗 ARN	0 tags	✏ 🗑
	2	-	Path = /	• **Forward to target group** frontend-tg ☑: 1 (100%) Target group stickiness: Off	🗗 ARN	0 tags	✏ 🗑
	Last (default)	Default	If no other rule applies	• **Forward to target group** backend-tg ☑: 1 (50%) frontend-tg ☑: 1 (50%) Target group stickiness: Off	🗗 ARN	0 tags	✏ 🗑

Flowchart: