How to Deploy a Node.js Application to AWS

This guide will help you deploy a Node.js application on an AWS EC2 instance, set up a web server using Nginx, and secure your application with SSL using Certbot.

Step 1: Launch and Connect to Your EC2 Instance

1. **Launch an EC2 Instance:**
   - Go to the AWS Management Console.
   - Launch a new EC2 instance with Ubuntu as the Amazon Machine Image (AMI).
   - Choose an instance type (e.g., t2.micro for the free tier).
   - Configure the instance, add storage, and create a key pair for SSH access.
   - Launch the instance.

Step 2: Update the Instance and Install Nginx

1. **Update the package lists:**

```
sudo apt update
```

2. **Install Nginx:**

```
sudo apt install nginx -y
```

3. **Start and enable Nginx:**

```
sudo systemctl start nginx
sudo systemctl enable nginx
```

Step 3: Configure the Firewall

1. **List available applications:**

```
sudo ufw app list
```

2. **Allow necessary traffic:**

```
sudo ufw allow ssh
sudo ufw allow http
sudo ufw allow https
sudo ufw allow 'Nginx Full'
```

3. **Enable the firewall:**

```
sudo ufw enable
```

4. **Check the firewall status:**

```
sudo ufw status
```

Step 4: Install and Configure Certbot for SSL

1. **Install Certbot:**

```
sudo apt install certbot python3-certbot-nginx -y
```

2. **Obtain an SSL certificate:**

```
sudo certbot --nginx -d <your_domain>
```

Step 5: Configure Nginx to Serve Your Node.js Application

1. **Edit the Nginx configuration file:**

```
sudo nano /etc/nginx/sites-available/default
```

2. **Replace the file content with:**

```
nginxCopy code
server {
    listen 80;
    server_name your_domain_or_IP; # Replace with your dom
ain or public IP address

    location / {
        proxy_pass http://localhost:3000; # Forward reques
ts to your Node.js app
        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;
    }

    error_page 500 502 503 504 /50x.html;
    location = /50x.html {
        root /usr/share/nginx/html;
    }
}
```

3. **Reload Nginx to apply the changes:**

```
sudo systemctl reload nginx
```

Conclusion

Your Node.js application should now be running on your AWS EC2 instance, accessible via your domain, and secured with SSL.