National College of Ireland

Configuration Manual

MSc Research Project
Cloud Computing

Ali Hamza
Student ID: x23257164

School of Computing
National College of Ireland

Supervisor: Shreyas Setlur Arun

National College of Ireland
Project Submission Sheet
School of Computing

Student Name:	Ali Hamza
Student ID:	x23257164
Programme:	Cloud Computing
Year:	2024
Module:	MSc Research Project
Supervisor:	Shreyas Setlur Arun
Submission Due Date:	12/12/2024
Project Title:	Configuration Manual
Word Count:	545
Page Count:	3

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Configuration Manual

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1 Frontend and Backend Setup

1.1 Frontend Setup

Technologies Used: React.js (Frontend UI), Tailwind CSS (UI Customization), Git & GitHub (Version Control), TMDB API (3rd party API integration)

Steps:

1. Cloned the GitHub repository
2. Navigated to the frontend directory: `cd frontend`
3. Installed dependencies: `npm install`
4. Started the frontend server: `npm run dev`

1.2 Backend Setup

Technologies Used: Node.js (Runtime), Express.js (Web Framework), SQL (Database Integration), Postman (API Testing)

Steps:

1. Navigated to the backend directory: `cd backend`
2. Installed dependencies: `npm install`
3. Created a `.env` file with necessary environment variables.
4. Started the backend server: `npm start`

2 Deployment Scenarios

2.1 AWS Deployment

2.1.1 Elastic Beanstalk

- Created a deployment environment using Elastic Beanstalk
- uploaded application code.

2.1.2 S3 (Static Website Hosting)

- Hosted a static React.js frontend on S3.
- Configured bucket policies for public access
- added entry points for error and normal scenarios

2.1.3 RDS Setup

- Configured Amazon RDS for backend database management.
- Linked EC2 instances with RDS for seamless data operations.

2.1.4 EC2 Docker Setup

- Installed docker and git
- Cloned git repository
- Ran Docker Containers using docker-compose
- Configured security groups, Elastic IPs, and Docker instances.

2.2 Azure Deployment

- Installed docker and git
- Cloned git repository
- Deployed application backend on Azure Virtual Machines.
- Configured auto-scaling, load balancing, and monitoring through Azure tools.

3 Links and Resources

3.1 GitHub Repositories:

- **Frontend Code Repository:** `https://github.com/Plasteredpeak/ResearchFrontend`
- **Backend Code Repository:** `https://github.com/Plasteredpeak/ResearchBackend`

3.2 AWS deployments

- **Elastic Beanstalk Deployment:** `http://anilist.us-east-1.elasticbeanstalk.com`
- **S3 Static Website:** `http://x23257164-research-frontend.s3-website-us-east-1.amazonaws.com`
- **EC2 Docker Backend:** `http://3.81.193.22:5000`
- **EC2 Docker Frontend:** `http://ec2-54-158-62-143.compute-1.amazonaws.com:3000`

3.3 Azure deployments

- **Azure Backend:** `http://20.93.16.76:5000`
- **Azure Frontend:** `http://20.93.16.76:3000`

4 Video Demonstrations:

- **YouTube Video Link:** `https://youtu.be/CP3vFd9yWT4`
- **One Drive Video Link:** `https://studentncirl-my.sharepoint.com/:v:/g/personal/x23257164_student_ncirl_ie/EYdsk0fwLQZGkrBQ6vH17ukBF1OcomFwqzJMxNfdP9TqE&nav=eyJyZWZlcnJhbEluZm8iOnsicmVmZXJyYWxBcHAiOiJPbmVEcml2ZUZvckJ1c2luZXNzIiwicmVmZXJyYWxBcHBQbGF0Zm9yb3JpZ2luIjoiT25lRHJpdmVGb3JCdXNpbmVzcyIsInJlZmVyYWxWaWV3IjoiTXlGaWxlc0xpc3RDb250ZXh0TWVudSIsInJlZmVyYWxWaWV3RGF0YSI6IkZvbGRlciIsInJlZmVyYWxXaWV3T3B0aW9uIjoiRGVmYXVsdCIsInJlZmVyYWxXaWV3U2hhcmluZ0RhdGEiOiJWaWV3In19&e=wzpAza`