

PROJECT SPECIFICATION

Refactor Udiagram App into Microservices and Deploy

Containers and Microservices

CRITERIA	MEETS SPECIFICATIONS
Divide an application into microservices	<code>/feed</code> and <code>/user</code> backends are separated into independent projects.
Build and run a container image using Docker	<p>Project includes Dockerfiles to successfully create Docker images for <code>/feed</code>, <code>/user</code> backends, project frontend, and reverse proxy.</p> <p>Screenshot of DockerHub shows the images.</p>

Independent Releases and Deployments

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Use Travis to build a CI/CD pipeline	<p>Project includes a <code>.travis.yml</code> file.</p> <p>Screenshot of the Travis CI interface shows a successful build and deploy job.</p>

Service Orchestration with Kubernetes

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Deploy microservices using a Kubernetes cluster on AWS	<p>A screenshots of <code>kubectl</code> commands show the Frontend and API projects deployed in Kubernetes.</p> <p>The output of <code>kubectl get pods</code> indicates that the pods are running successfully with the <code>STATUS</code> value <code>Running</code>.</p> <p>The output of <code>kubectl describe services</code> does not expose any sensitive strings such as database passwords.</p>
Use a reverse proxy to direct requests to the appropriate backend	<p>Screenshot of Kubernetes services shows a reverse proxy</p>
Configure scaling and self-healing for each service	<p>Kubernetes services are replicated. At least one of the Kubernetes services has <code>replicas:</code> defined with a value greater than 1 in its <code>deployment.yml</code> file.</p> <p>Screenshot of Kubernetes cluster of command <code>kubectl describe hpa</code> has autoscaling configured with CPU metrics.</p>

Debugging, Monitoring, and Logging

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Use logs to capture metrics for debugging a microservices deployment	Screenshot of one of the backend API pod logs indicates user activity that is logged when an API call is made.

Suggestions to Make Your Project Stand Out!

- 1. Improve logging with request ID's
 - 2. Reduce duplicate code in back end code
 - 3. Secure AWS resources for least-privileged access for IAM roles
 - 4. Create dependency graph of application services and AWS resources
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